Star FINGER006/EX
iPASS IP-FINGER006
IDTECK FINGER006SR

Fingerprint Identification
Proximity / PIN Reader

IDTECK

Table of Contents

1. Important Safety Instructions

When using **Fingerprint Identification (Proximity / PIN) Reader**, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons.

In addition, the following safety guides should also be followed:

1. **Fully** read and understand all instructions and follow them completely.
2. **Follow** all warnings and instructions marked on the product.
3. **Do not** use liquid or aerosol cleaners. Use a damp cloth for cleaning. If necessary, use mild soap.
4. **Do not** use this product near water.
5. **Only** operate this product using the type of power source indicated. If you are not sure of the type of power supplied to your installation site, consult your dealer of local power company.
6. **Never** insert objects of any kind into the product or through the cabinet slots as they may touch voltage points and/or short circuit parts possibly resulting in fire or electric shock.
   Never spill liquid of any kind on the product.
7. **Never** disassemble this product by yourself; take the unit to a qualified service center whenever service or repair is required. Opening or removing the covers may expose you to dangerous voltages or other risks. Also, incorrect reassembly can cause electric shock when the unit is subsequently used.
8. **Unplug** this product from the Direct Current (DC) power source and refer to qualified service personnel under these conditions:
   a. When the power supply cord or plug is damaged or frayed.
   b. If liquid has been spilled on the product.
   c. If the product does not operate normally after following the operating instructions in this manual.
      Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls that are not covered by this manual may damage the unit and will often require extensive work by a qualified technician to restore normal operation.
   d. If the product exhibits a distinct change in performance.

2. General

The **Star FINGER006/P / iPASS IP-FINGER006 / IDTECK FINGER006SR** is such a highly advanced and intelligent fingerprint reader (with a keypad) with a powerful 32bit and dual 8bit microprocessor to meet the market requirement for a robust integrated solution for access control and time & attendance.

The unit has been designed to be flexible and reliable in providing the ultimate biometrics high security at a reasonable cost.

This user-friendly device allows you to register up to 720 fingerprint IDs (optional 2,000/4,500) and add / delete user IDs conveniently.

With the built-in 4" RF reader, the keypad for Personal Identification Numbers (PIN), and a sophisticated biometric fingerprint module, the **FINGER006** offers up to three levels of ID verification.

Any combination of Proximity, PIN, and Biometric may be used and different verification levels can be customer programmed for each user or user group.

3. Features

- 125KHz Proximity / PIN and Fingerprint Recognition
- 1,000 / 2,000 / 4,000 Fingerprint Users
- 1:1 Verification and 1: N Identification
- 2 Fingerprint Storage Templates
- Identification Method:

  by PIN Key (default)

  by Auto Touch Sensor (optional) : FINGER006A, FINGER006PA, FINGER006EXA

- ID Only Function for Persons with Unregisterable Fingerprints
- Network Communication via RS232 / RS422 / RS485 (Max.256ch),
  TCP/IP (External LAN Converter Required)
- 1 ea of External Reader Port (FINGER006EX): 26bit Wiegand, 4 / 8bit Burst for PIN and ABA Track II
- 26bit Wiegand and ABA Track II Output Format
- High Protection from Scratch and ESD (Electro Static Discharge)
- High Quality Optical Sensor
- Dual Tamper Switches
- Options:

  Auto Touch Sensor for Identification (FINGER006A, FINGER006PA, FINGER006EXA)

  Supervisory Signal
- Compatible Software: STARWATCH DUAL PRO I / II, STARWATCH iTDC PRO I / II
- Compatible Controller: iCON100, iTDC, Third Party Controller, Standalone Controller

*** Comparison Table**

FINGER006	Built-in 125KHz (4") Proximity Reader
	RF(PIN) Only / Fingerprint Only / RF(PIN)+ Fingerprint RF(PIN)+P/W(4digit) / RF(PIN)+P/W+ Fingerprint
FINGER006P	PIN(4~8digit) Only / Fingerprint Only / PIN + Fingerprint PIN + P/W(4digit) / PIN+ P/W+ Fingerprint
FINGER006EX	Built-in 1ea of External Reader Port
	RF(PIN) Only / Fingerprint Only / RF(PIN)+ Fingerprint RF(PIN)+P/W(4digit) / RF(PIN)+P/W+ Fingerprint
FINGER006A	Auto Touch Sensor for Identification
FINGER006PA	Auto Touch Sensor for Identification
FINGER006EXA	Auto Touch Sensor for Identification

4. Specification

Model			**FINGER006**	**FINGER006P**	**FINGER006EX**
CPU			32bit ARM9 and Dual 8bit Microprocessor		
Memory	**Fingerprint Module**	**Program Memory**	128KByte Flash Memory		
		Data Memory	128KByte / 256KByte / 512KByte Flash Memory		
	Controller	**Program Memory**	64KByte Flash Memory		
		Data Memory	512KByte SRAM (Battery back up)		
Fingerprint User			1,000 / 2,000 / 4,000 Fingerprint Users		
Fingerprint Template Size			800 Bytes for 2 Fingerprint Templates		
Read Range		**Passive Type**	IDK50 / IMC125: Up to 2 inch (5cm) IDC80 / IDC170: Up to 4 inch (10cm)	PIN Only	PIN Only
		Active Type	IDA150 / IDA200 Comapatible		
Reading Time (Card)			30ms		
Verification / Identification Time			Less than 1sec. / Less than 2sec.		
Power / Current			DC 12V / Max.300mA		
External Reader Port			N/A	N/A	1ea (26bit Wiegand, 4/8bit Burst for PIN, ABA Track II)
Communication			RS232 / RS422 / RS485 (Max.256ch)		

		TCP/IP (External LAN Converter required)
Baud Rate		9,600bps (recommended) / 4,800bps, 19,200bps and 38,400bps (selectable)
Input Port		2ea (Error-Input, OK-Input)
Output Port		2ea (Error-Output , OK-Output (Open Collector Output))
Output Format		26bit Wiegand, ABA Track II
LCD		Character LCD (2 Lines x 16 Char) / 65.6mm x 13.8mm (2.62" x 0.55") Screen
Keypad		16 Key Numeric Keypad with Back Lighting
LED Indicator		3 Array LED Indicators (Red, Green and Yellow)
Beeper		Piezo Buzzer
Operating Temperature	**Fingerprint Module**	-15° to +40°C (+5° to +104°F)
	LCD	0° to +50°C (+32° to +122°F)
	Controller	-15° to +70°C (+5° to +158°F)
	RF Reader	-35° to + 65°C (-31° to +149°F)
Operating Humidity		10% to 90% relative humidity non-condensing
Color / Material		Dark Pearl Gray / Polycarbonate
Dimension (W x H x T)		161.5mm x 134mm x 48.5mm (6.36" x 5.28" x 1.9")
Weight		547g (1.21lbs)
Certification		MIC

*** Fingerprint Module Specification**

Resolution	500dpi
Capture Image Size	356 X 292 pixels
Extraction Image Size	248 X 292 pixels
Sensing Area	12.7mm X 14.9mm
Scanner	High Quality Optical Sensor
FAR(False Acceptance Ratio)	0.001%
FRR(False Reject Ratio)	0.1%
ESD(Electro Static Discharge)	15KV
Verification Time	Less than 1sec.
Identification Time	Less than 2 sec.

5. Identifying Supplied Parts

Please unpack and check the contents of the box.

Main Unit
(1ea)

Wall Mount
(1ea)

O-ring
(5ea)

User's Manual
(1copy)

6. Product Overview

6.1. FUNCTIONS

Operation with the Host Computer

ID data transactions can be managed via the host computer. The data transmitted from the controller can be displayed and stored on the host PC.

Data Retention

All user information and event data are retained permanently, even in power failure.

※ For versions lower than V.4.0.0, the backup battery switch must be set correctly before the unit runs. The controller retains all user information data for 30 days, even in power failure. However, V4.0.0 or higher doesn't have a backup battery because those higher versions use a flash memory which is nonvolatile and therefore retains data in the event of power failure.

Keypad

The built-in keypad and the LCD screen let you perform manual programming without a PC connected.

Dual Finger Mode

Dual Finger Mode is a function that lets a user register two fingers for one ID so that the user can receive authentication with either of the two registered fingers. This is useful when a user's finger is injured.

1:N Identification

A user can gain authentication using the fingerprint alone without RF card or PIN. You can set this function through the <TYPE SELECTION> in SETUP MENU F1. In the IDENTIFICATION MODE, the security level is automatically increased and it causes FRR(False Rejection Ratio) to get higher, which may result in reduction of successful recognition rate. When using this mode, the user has to press the **<ENT>** key first, and then the fingerprint scanner waits for a fingerprint to be scanned. When the fingerprint-scan is completed, **FINGER006** identify the user and makes corresponding outputs.

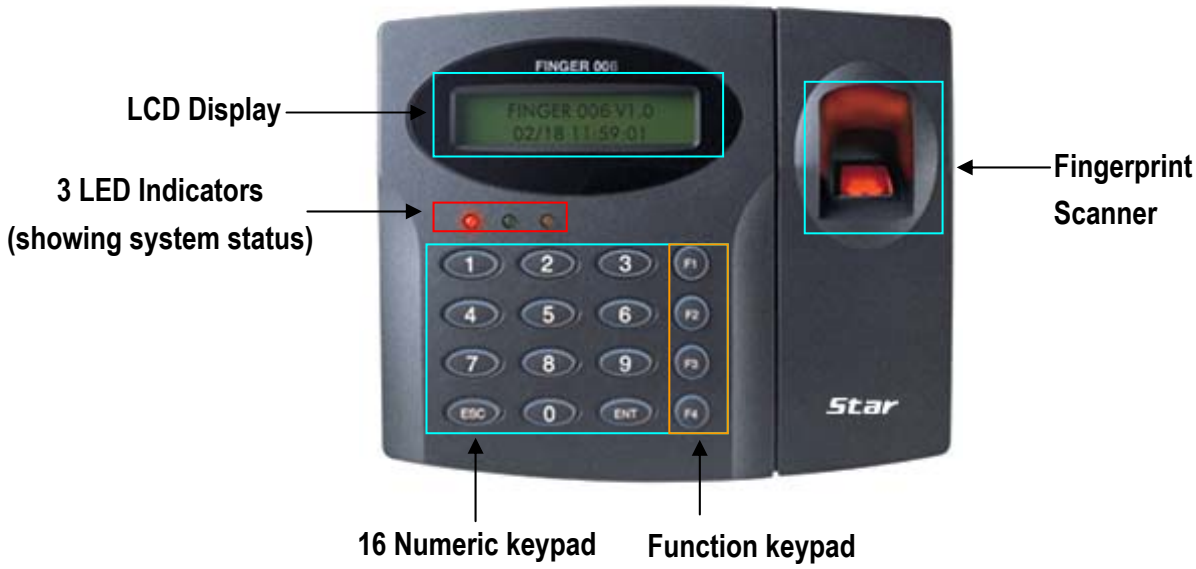
- **FINGER006** has a sensor (**OPTION!**). Normally, a user needs to press **<ENT>** in the identification mode before placing their finger on the sensor. However, if a sensor is installed, **FINGER006** detects the user's finger and scans it automatically.
- **CAUTION: The number of registrants must be less than 50 on this mode.**

Voice Message - Option

The **FINGER006** can optionally have a voice chip and small power amp (300mW). If you connect a speaker, you can hear the voice output while operating.

6.2 PRODUCT EXPLANATION

6.2.1 PANEL DESCRIPTION



FINGER006 (Versions lower than V4.0.0) has a S/W (reverse side – Template hole) for the backup battery connection, which is left open circuit to prevent any current consumption of backup battery (Figure: DIP Switch Setting). Before **FINGER006** installation, the S/W needs to be connected so that the backup battery can be activated to retain the memory during power failure. **FINGER006 V4.0.0 or higher doesn't have a backup battery, so it doesn't have a S/W, either.**

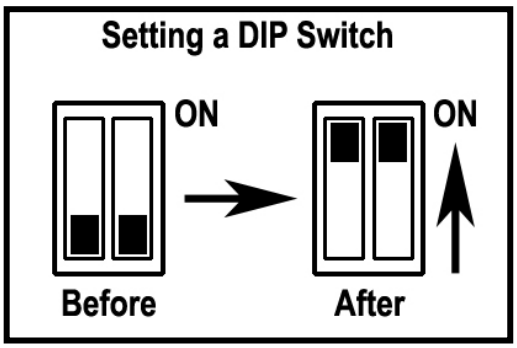


Figure: DIP Switch Setting

Figure: DIP Switch location

6.2.2. COLOR CODED & WIRING TABLE

SIGNAL	COLOR
Main Power (+12V)	Red
Power Ground (GND)	Black
ABA Track II CP Out	Orange
Wiegand Data 0 Out / ABA Track II Data Out	Green
Wiegand Data 1 Out / ABA Track II Clock Out	White
Error Signal Out	Gray with Red stripe
OK Signal Out	White with Red stripe
Tamper Switch Out	Purple with White stripe
Speaker Out (+)	Brown with White stripe
Speaker Out (-)	Purple
ABA Track II CP In	Orange with White stripe
Wiegand Data 0 In (EX) / ABA Track II Data In (EX)	Pink
Wiegand Data 1 In (EX) / ABA Track II Clock In (EX)	Cyan
Error Signal In	Blue with White stripe
OK Signal In	Yellow with Red stripe
RS232 (TX)	Black with White stripe
RS232 (RX)	Red with White stripe
RS422 (TX+)	Gray
RS422 (TX-)	Yellow
RS422 (RX+)	Brown
RS422 (RX-)	Blue
*** Please cut out the tail connector before installation.**	

7. Installation Tips & Check Point

Installing the **Star FINGER006/P / iPASS IP-FINGER006 / IDTECK FINGER006SR** is an easy task. It can be installed with common hand tools and readily available communications wires.

This section provides information about wiring, wire runs and other information to make the installation quick and easy.

7.1 CHECK POINTS BEFORE INSTALLATION

7.1.1 SELECTION OF CABLE

System installation cabling will be configured as follow.

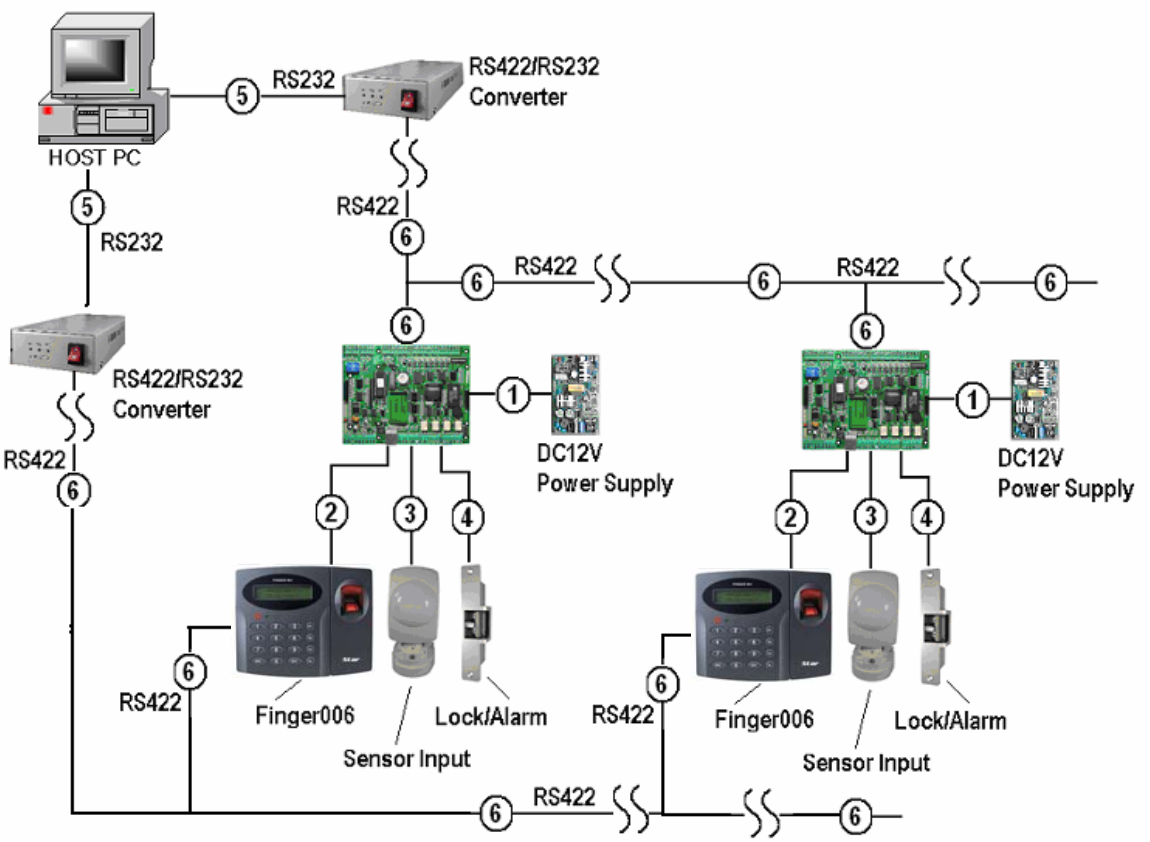


Figure: System Installation Layout

7.1.2 RECOMMENDED CABLE TYPE AND PERMISSIBLE LENGTH OF CABLE

Reference	Description	Cable Specification	Maximum Distance
①	Controller Power (DC12V) DC Power ➡ Controller	Belden #9409, 18 AWG 2 conductor, unshielded	30m
②	Reader (Power and Data) FINGER006 ➡ Controller	Belden #9512, 22 AWG 4 conductor, shielded	150m
		Belden #9514, 22 AWG 8 conductor, shielded	
③	Door Contact Exit Button Sensor Input Input ➡ Controller	Belden #9512, 22 AWG 4 conductor, shielded	300m
		Belden #9514, 22 AWG 8 conductor, shielded	

④	Door Lock, Alarm Device Lock (Alarm) ➡ Controller	Belden #9409, 18AWG 2 conductor, unshielded	300m
⑤	**RS232 Cable** Converter ➡ Host P.C.	Belden #9829, 24 AWG 2-twisted pair, shielded	15m
⑥	**RS485 Cable** Controller ➡ Converter Controller ➡ Controller Controller ➡ FINGER006 FINGER006 ➡ FINGER006 FINGER006 ➡ Converter	Belden #9829, 24 AWG 2-twisted pair, shielded	1,200m
	RS422 Cable Controller ➡ Converter Controller ➡ Controller Controller ➡ FINGER006 FINGER006 ➡ FINGER006 FINGER006 ➡ Converter	Belden #9830, 24 AWG 3-twisted pair, shielded	

* Thicker wires are necessary if the connected reader consumes a higher current.

7.2 CHECK POINT DURING INSTALLATION

7.2.1 TERMINATION RESISTOR

Termination resistors are used to match impedance of the network to the impedance of the transmission line being used. When impedance is mismatched, the transmitted signal is not completely absorbed by the receiver and a portion of signal is reflected back into the transmission line.

The decision whether or not to use termination resistors should be based on the cable length and data rate used by the communication system.

For example, if you use 9,600 baud rate and 1,200m length of cable, the propagation velocity of cable is 0.66 x speed of light (This value is specified by the cable manufacturer), if we assume the reflections will damp out in three round trip up and down the cable length, the transmitted signal will stabilize 18.6us after the leading edge of a bit. Since the data bit is captured in the middle of the bit which is approximately 52us after the leading edge of a bit. The reflection stabilizing time 18.6us is much before the center of the bit therefore the termination resistors are not required.

However, if you install the cable to maximum length, the impedance of cable and network is mismatched and the transmitted signal is overlapped by the reflected signal. In this case, it is recommended to add termination resistors to the end of the receiver lines. A 120Ω resistor can be used for termination resistor in parallel between the receiver lines “A” and

"B" for 2 wires RS485 system or "RX+" and "RX-" for 4 wires RS422 system. A termination resistor of less than 90Ω should not be used and no more than 2 terminations should be used in one networking system.

7.2.2 HOW TO CONNECT TERMINATION RESISTORS

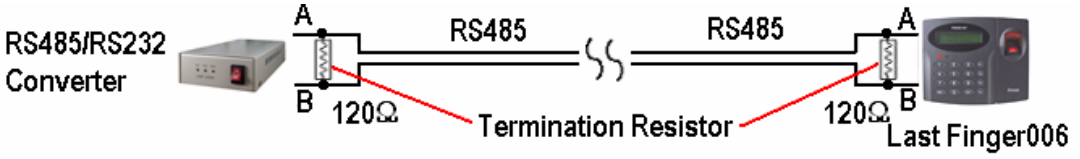


Figure: Termination resistors for 2-wire RS485 communication system

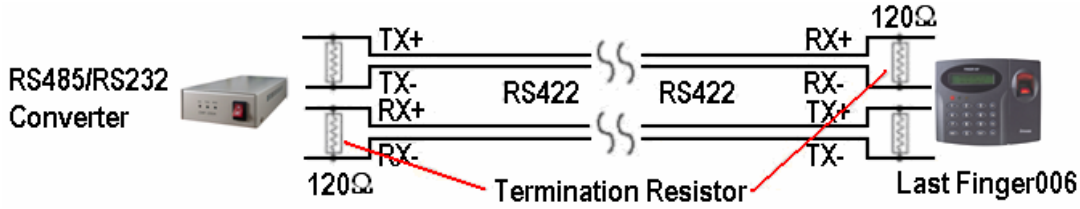


Figure: Termination resistors for 4-wire RS422 communication system

7.2.3 GROUNDING SYSTEM FOR COMMUNICATION CABLE

We recommend to use proper grounding system on the communication cable. The best method for grounding system is to put the shield wire of the communication cable to the 1st class earth grounding; however it is not so easy to bring the earth ground to the communication cable and also the installation cost is raised.

There will be three grounding point where you can find during installation;

1) Earth Ground
2) Chassis Ground
3) Power Ground

The most important point for grounding system is not to connect both ends of shield wires to the grounding system; in this case there will be a current flow through the shield wire when the voltage level of both ends of shield wire is not equal and this current flow will create noise and interfere to communications.

For the good grounding, we recommend to connecting ONLY one end of shield wire of communication cable to grounding system; If you find earth ground nearby, then connect one end of shield wire to earth ground; If you do not have earth ground nearby, then find chassis ground and connect one end of shield wire to chassis ground; If you do not find both earth ground and chassis ground, then connect one end of shield wire to power ground. (GND of FINGER007)

Note that if the chassis ground is not properly connected to the earth and floated from the ground level, then grounding to the chassis ground will give the worst communication; in this case we recommend to using power ground instead of chassis ground.

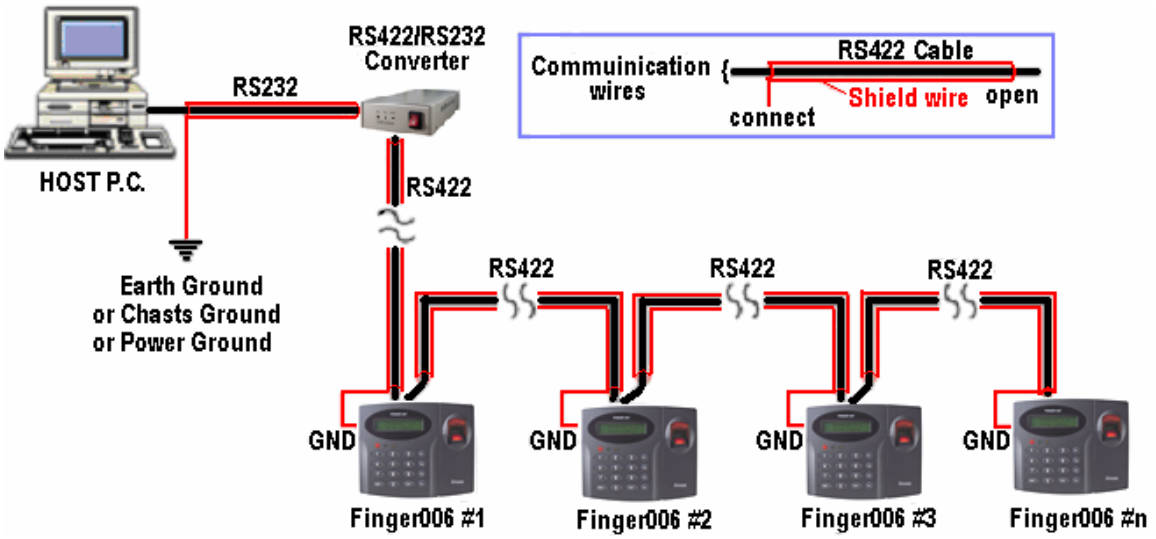


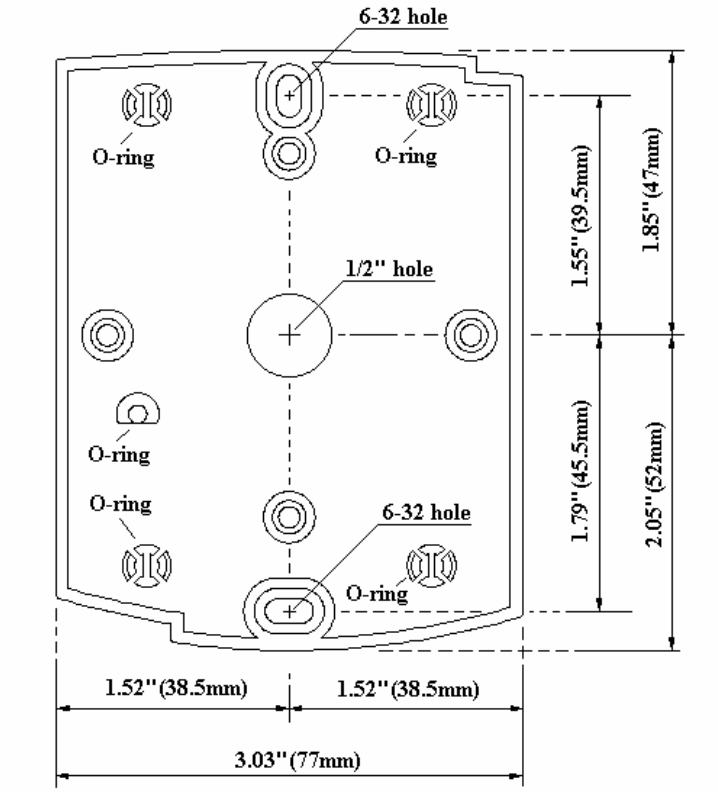
Figure: Grounding system

8. Installation of the Product

8.1 TEMPLATE

- Tear off the Template page at the back of this manual and use the Template to drill two 6-32 holes and one ½" hole on the proper location of the wall to mount the Wall Mount bracket as shown below.

  (If the gang box is already installed on the wall, then skip this step.)



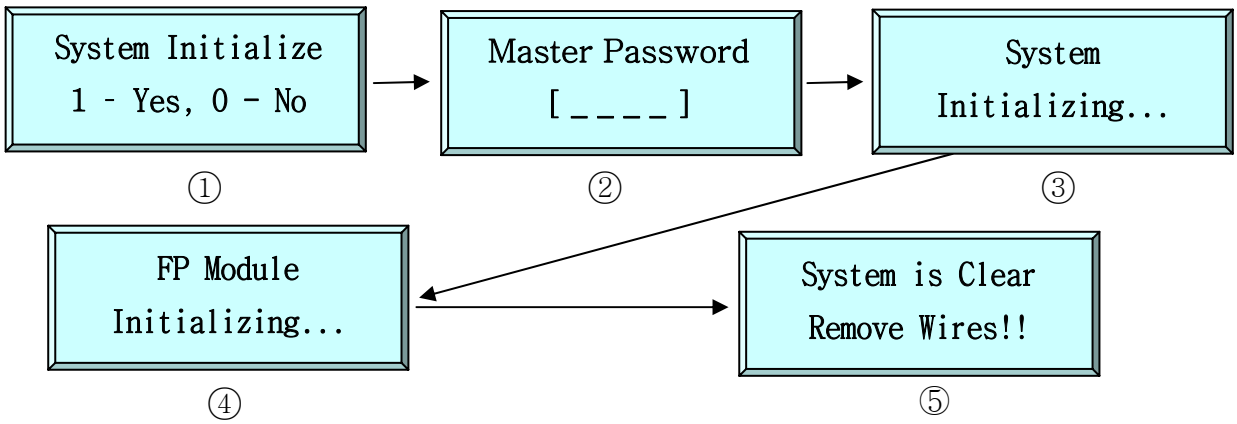
- Using 2 screws, install wall mount to the wall.

※**Caution**: Before mounting the **Star FINGER006/P/EX / iPASS IP-FINGER006 / IDTECK FINGER006SR** unit to the Wall Mount bracket, an operational test of the unit should be completed, because the locking pins will lock the unit to the Wall Mount. Removing the unit from the Wall Mount bracket after it has been snapped in place may cause damage to the bracket and prevent reattachment.

- Insert 5 O-Rings to the Wall Mount as indicated, then run the cable from the main unit through the center hole and snap in place the main unit to Wall Mount. Make sure that the main unit is securely locked in place with Wall Mount.

8.2 SYSTEM INITIALIZATION (External Reader Port)

Hardware initialization must be done before installation of FINGER006. For versions lower than V4.0.0, the Backup Battery Switch on the back side should be connected before hardware initialization. Hardware initialization can be done using the external reader port. First, turn off the system power and connect 3 wires (pink, cyan and black (GND)) together, and turn on the system power. Then, the “Initialize beep” will sound and the LCD message ① will be displayed.



1. ① : If you want H/W Initialization, press the **<1>** key.
2. ② : Enter the initial master password(**<3141>**).
3. ③, ④ : Initialization status.
4. ⑤ : Initialization is completed
   –Turn the power **OFF** and separate the 3 wire and turn the power **ON** again.

8.3 WIRING

8.3.1 POWER

- Connect the (+) wire of DC 12V power to the +12V (Red) wire.
- Connect the GND (-) wire of DC 12V power to the GND (Black) wire.

8.3.2 OUTPUT CONNECTIONS

Wiegand Data Connection

- Connect Data 0 of the controller to Wiegand Data 0 Out (Green wire).
- Connect Data 1 of the controller to Wiegand Data 1 Out (White wire).
- If you disconnect the power from the controller, connect the GND port between controllers.

ABA Track II Connection

- Connect Data 0 of the controller to ABA Track II Data Out (Green wire).
- Connect Data 1 of the controller to ABA Track II Clock Out (White wire).
- Connect CP of the controller to ABA Track II CP Out (Orange wire).
- If you disconnect power from the controller, connect the GND port between controllers.

Control Signal Connection

- Connect Error input of the controller to Error Signal Out (Gray with Red stripe wire).
- Connect Ok input of the controller to OK Signal Out (White with Red stripe wire).
- Connect Error output of the controller to Error Signal In (Blue with White stripe wire).
- Connect Ok output of the controller to OK Signal In (Yellow with Red stripe wire).
- Connect Tamper input of the controller to Tamper Switch Out (Purple with White stripe) wire.

Speaker Signal Connection

- Connect the external speaker (+) to the Speaker Out (+) (Brown with White stripe wire).
- Connect the external speaker (-) to the Speaker Out (-) (Purple wire).

External Reader Connection (FINGER006EX)

[Wiegand Input]

- Connect Data 0 of the external reader to Wiegand Data 0 In (EX) (Pink wire).
- Connect Data1 of the external reader to Wiegand Data 1 In (EX) (Cyan wire).

[ABA Track II Input]

- Connect Data of the external reader to ABA Track II Data In (EX) (Pink wire).
- Connect Clock of the external reader to ABA Track II Clock In (EX) (Cyan wire).
- Connect CP of the external reader to ABA Track II CP In (Orange with White stripe wire).

9. Communication

9.1 RS232 COMMUNICATION PORT CONNECTION

A 9-pin connector (Serial communication connector, female) is required to connect the **FINGER006** to a host computer via RS232 communication. Please follow the instructions.

- Connect RS232-TX port of **FINGER006** to the pin 2 of the 9-pin connector.
- Connect RS232-RX port of **FINGER006** to the pin 3 of the 9-pin connector.
- Connect RS232-GND of **FINGER006** to the pin 5 of the 9-pin connector.

Plug in the 9-pin connector to COM1 or COM2 Port of the host PC.

Install and run **FINGER006** Application Software.

9.2 RS422 COMMUNICATION PORT CONNECTION

9.2.1 RS422 CONNECTION (SINGLE FINGER006 CONNECTION)

RS422/RS232 converter (CNP200) is required to use RS422 communication between the **FINGER006** and a host computer. Please follow the instructions.

- Connect RS422-TX(+) of the **FINGER006** to RS422-RX(+) port of the converter.
- Connect RS422-TX(-) of the **FINGER006** to RS422-RX(-) port of the converter.
- Connect RS422-RX(+) of the **FINGER006** to RS422-TX(+) port of the converter.
- Connect RS422-RX(-) of the **FINGER006** to RS422-TX(-) port of the converter.
- Plug in the RS232 9pin connector of the converter to the COM1 or COM2 Port of the PC.
- Install and run the **FINGER006** Application Software.

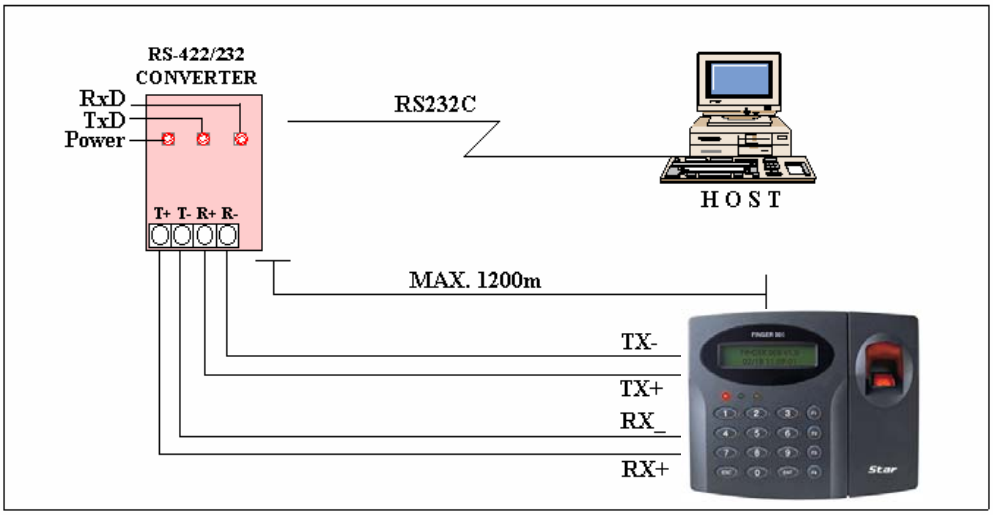


Figure: RS422 Communication between FINGER006 and Host PC

9.2.2 RS422 CONNECTION (MULTIPLE FINGER007 CONNECTIONS)

RS422/RS232 converter is required to use RS422 communication between multiple **FINGER006** units and a host PC. Please follow the next instructions.

First, you have to connect all RS422 port of all **FINGER006s** in parallel.

- Connect RS422-TX(+) of one **FINGER006** to RS422-TX(+) of another **FINGER006**.
- Connect RS422-TX(-) of one **FINGER006** to RS422-TX(-) of another **FINGER006**.
- Connect RS422-RX(+) of one **FINGER006** to RS422-RX(+) of another **FINGER006**.
- Connect RS422-RX(-) of one **FINGER006** to RS422-RX(-) of another **FINGER006**.

Second, you have to connect one of RS422 port of **FINGER006** to RS422/RS232 converter.

- Connect RS422-TX(+) of the one **FINGER006** to RX(+) port of the converter.
- Connect RS422-TX(-) of the one **FINGER006** to RX(-) port of the converter.
- Connect RS422-RX(+) of the one **FINGER006** to TX(+) port of the converter.
- Connect RS422-RX(-) of the one **FINGER006** to TX(-) port of the converter.
- Plug in the RS232 9pin connector of the converter to the COM1 or COM2 port of the PC.
- Install and run **FINGER006** Application Software.

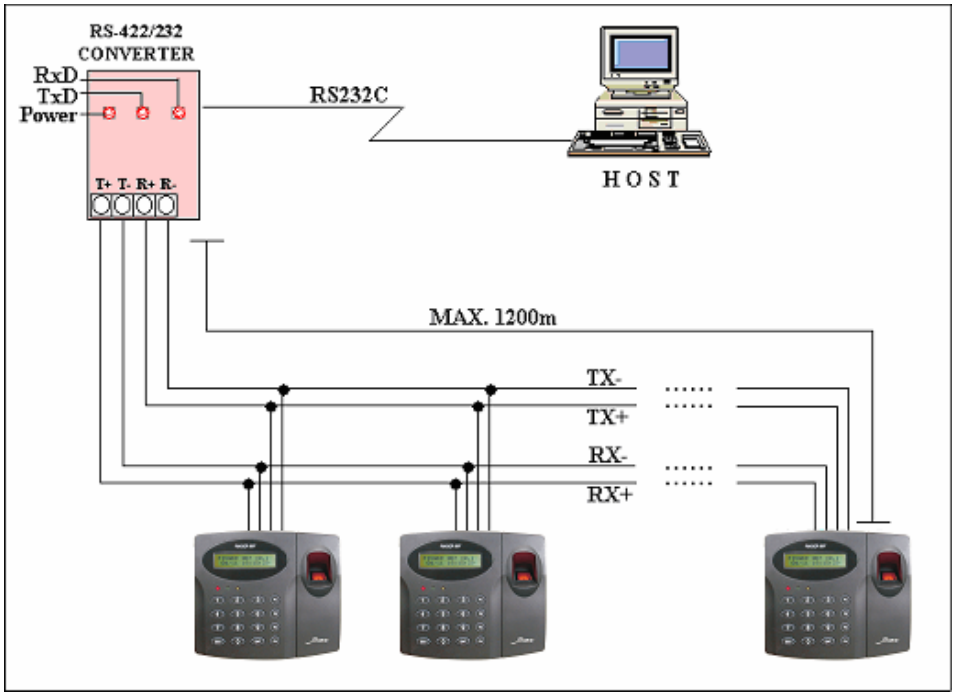


Figure: RS422 Communication between FINGER006s and the Host PC

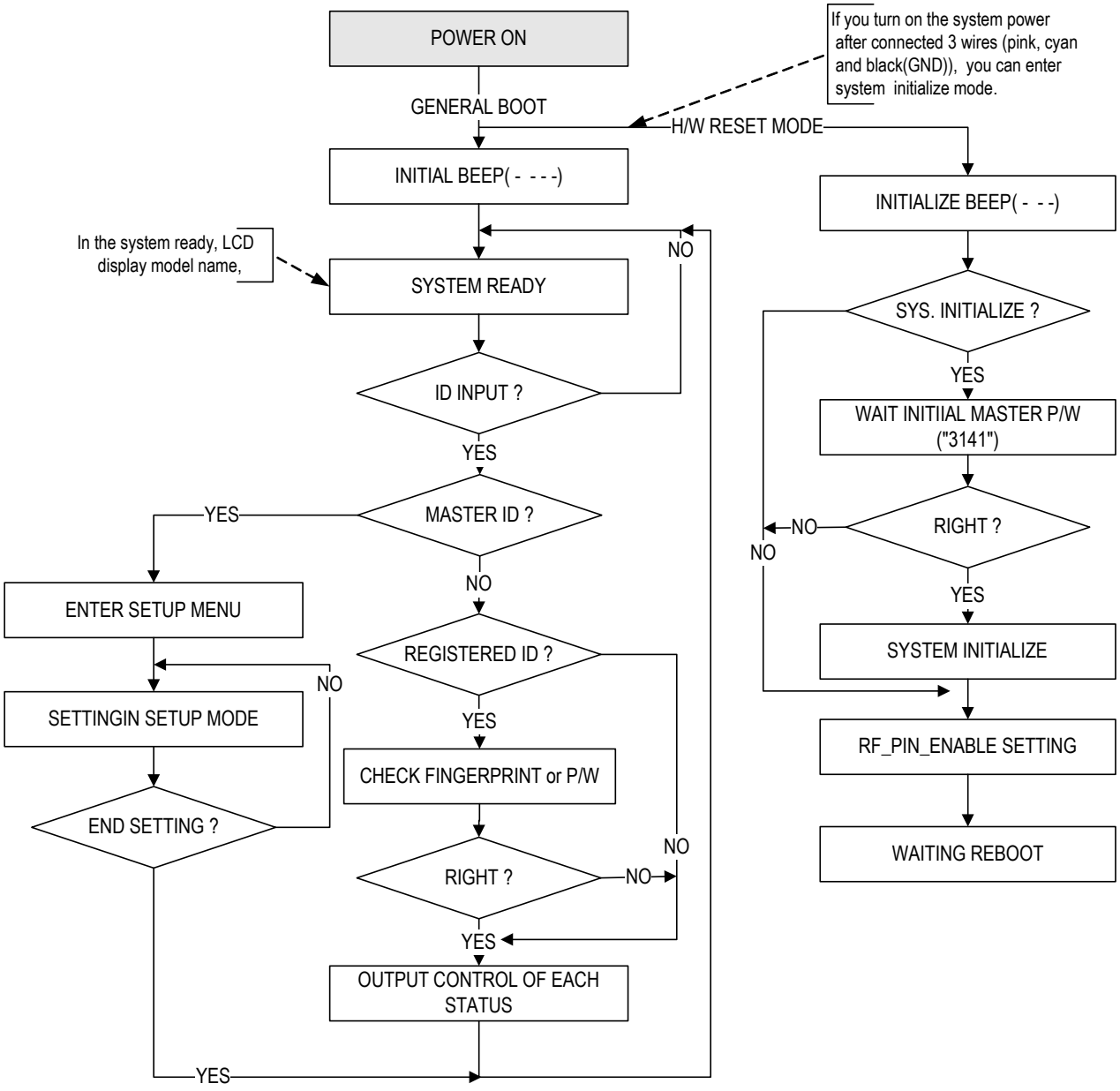
9.3 DIAL UP MODEM

Please, see the Software manual.

9.4 TCP/IP CONVERTER (EXTERNAL VERSION)

Please, see the Software manual.

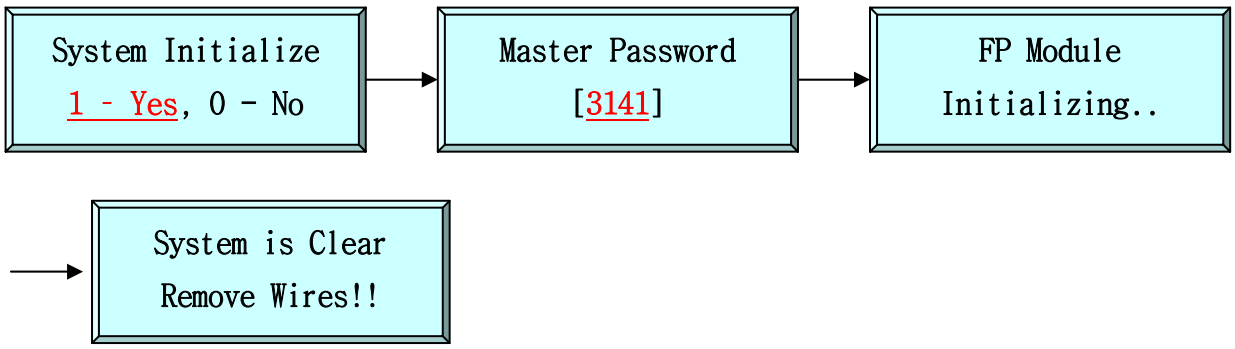
10. Basic Setting



10.1 INITIALIZATION OF FINGER006

You need to initialize the hardware, before installation of the system or when you cannot enter the setup menu (due to a system error or something wrong). You can initialize the hardware using an external reader port. To do that, turn off the system power and connect the 3 wires (pink, cyan and black (GND)), then turn on the system power again. (**Ref. 5.3 FINGER006 INITIALIZATION**). Initialization will erase all stored data including registered ID data. Therefore, you will have to configure system parameters. Remember that you need to initialize the Hardware prior to the first installation of the system.

For hardware version lower than V4.0.0, the Backup Battery Switch on the back side of the product needs be connected before Hardware initialization. (FINGER006 V4.0.0 or higher doesn't have the Switch, so you can skip the switch setting.)



10.2 HOW TO ENTER THE SETUP MENU

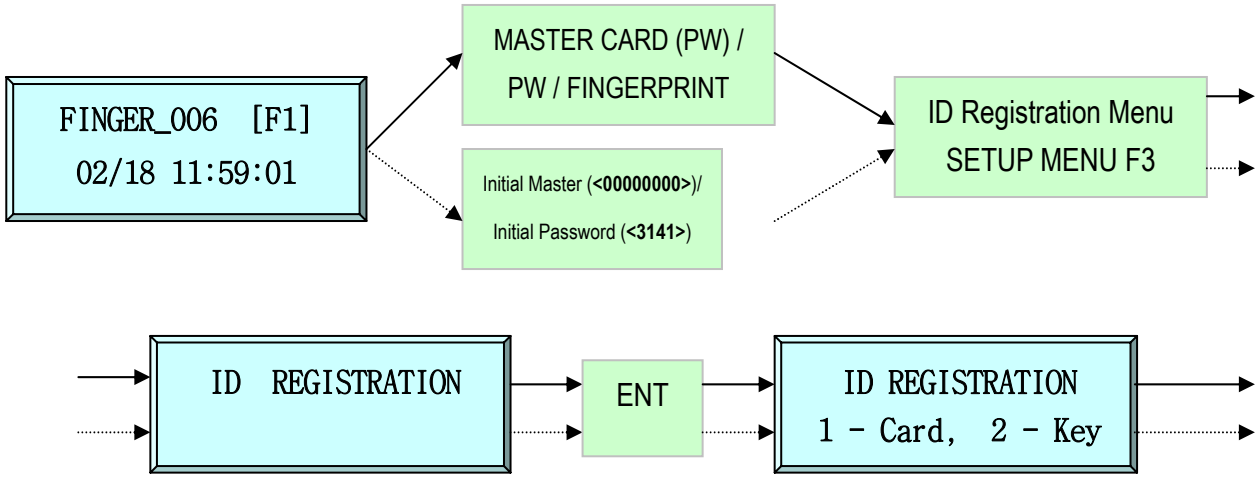
For a setup or **FINGER006** setting adjustment, you have to enter the **SETUP MENU**, first. To do so, press the <**0**> key 8 times for **Master ID** (Default "00000000") and the <**ENT**> key and press the **Master Password** (Default "3141") and the user can get into the SETUP MENU. There are 4 main SETUP MENUs and you first get into [SETUP MENU F1]. You can move to other SETUP MENUs by pressing <**F1**> key for [SETUP MENU F1], <**F2**> key for [SETUP MENU F2], <**F3**> key for [SETUP MENU F3], and <**F4**> key for [SETUP MENU F4]. There are several **SUB MENUs** for each main SETUP MENU and you can scroll up and down the SUB MENU by pressing <**4**> and <**6**> key in the main SETUP MENU. You can press the <**ESC**> key to exit the SETUP MENU and return to the normal operation. You can also change the Master ID in the [SETUP MENU F1]. The Master ID for **FINGER006SR** is a 10-digit number (Default "0000000000") and the default Master Password is <**3141**>.

10.3 ID REGISTRATION

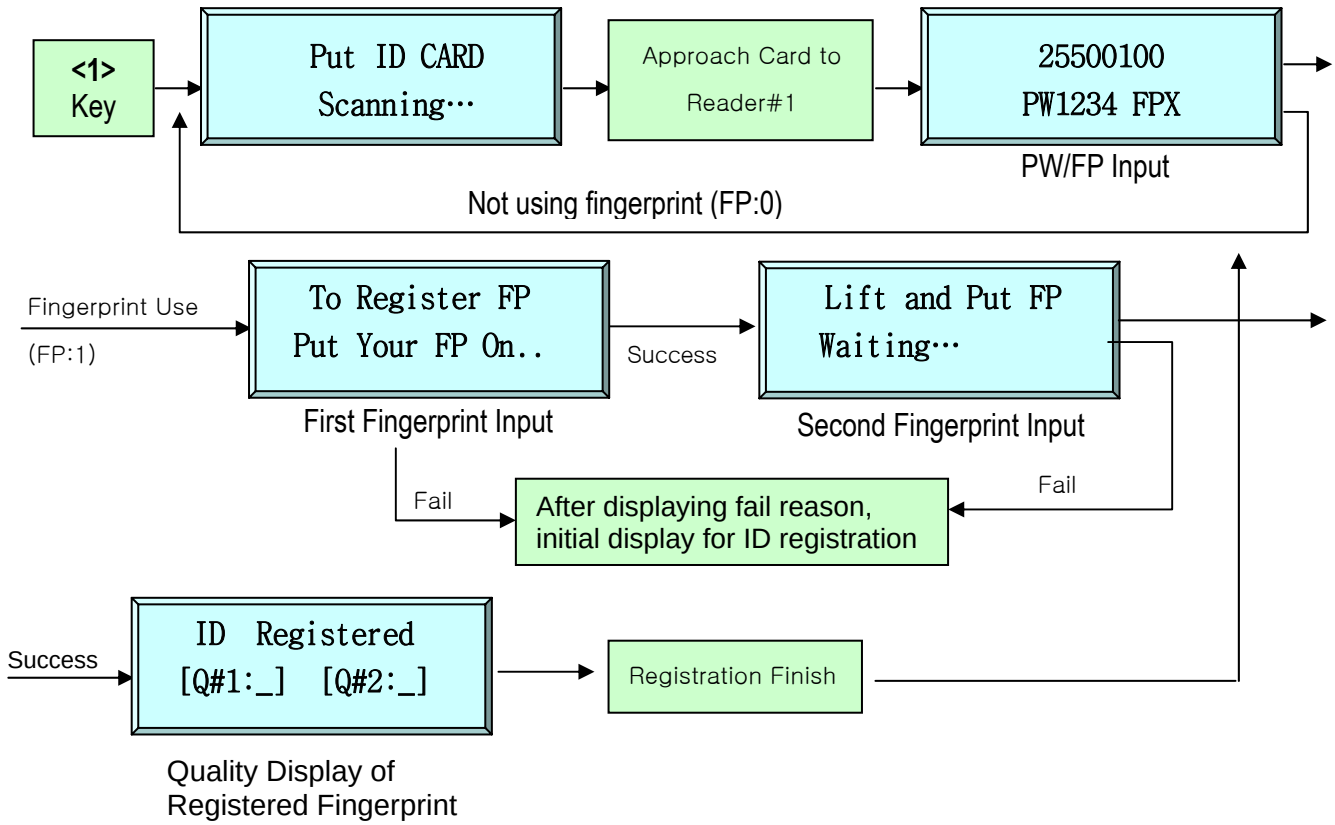
Registering User IDs to **FINGER006**. Select [SETUP MENU F3] → [ID REGISTRATION] ,then follow the steps below.

The Master ID for **FINGER006SR** is a 10-digit number (Default "0000000000").

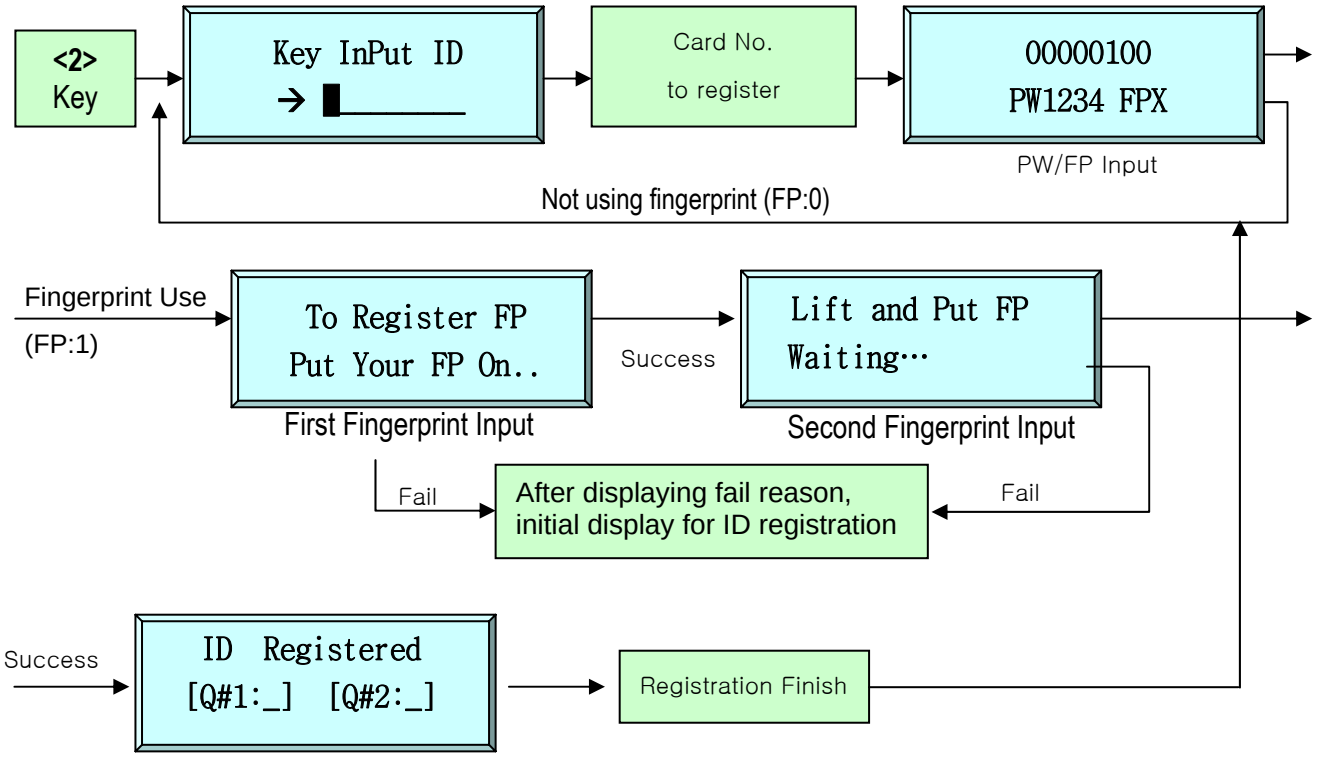
1. Approach to the Registration Mode



2. Registration by an RF Card (**FINGER006** only)



3. Registration by Keypad (**FINGER006** & **FINGER006P**)



4. After ID Registration is completed, return to the initial display by pressing the **<ESC>** Key.
5. You may register more than 1 ID. Register more IDs one by one, after the first ID registration is done.
6. If you're re-registering an ID and it is registered with a fingerprint already, you will be required to enter the previously-registered fingerprint, first.
7. In the case of **FINGER006P**, you cannot register IDs using the RF card.

- The [ID] is a kind of Personal Identification Number that can be entered using an RF Card or the Keypad. An ID number recorded on an RF card consists of 3-digit Facility code from 000 to 255 and 5-digit ID number form 00000 to 65535 so that the 8-digit ID number cannot exceed 25565535. (ID number of **FINGER006SR** has 10-digit decimal numbers (0000000001 ~ 4294967295) ID number can not exceed 4294967295.)

- The [PW] field is for password input. A password is necessary to access the doors if the controller is being operated in RF+FINGERPRINT (P/W) or RF+P/W+FINGERPRINT Mode. But, regardless of the operating mode, it is necessary to input a password during registration.

- The [FP] field is for selecting whether or not to register a fingerprint for the user. If "1" is entered for the value, the user has to register fingerprint. Then, the user can later attempt access by a fingerprint in RF+FINGERPRINT (P/W) and RF +P/W+FINGERPRINT Mode. If "0" is entered for the value, a fingerprint is replaced by a password.

11. Operation

11.1 NORMAL OPERATION

Power ON

When the Power is applied to **FINGER006**, the RED LED is turned on.

Registered Card Reading

When a registered card (or PIN) is read, the GREEN LED will be lit for 3 seconds (Default), and ID data is sent through Wiegand or ABA Track II output line. If the **"EXTENSION MODE"**(OUTPUT TYPE) is applied, an OK Signal is generated with ID data output. If the **"STAND ALONE"**(TYPE SELECTION) setting is set to **"NOT USE"**, **FINGER006** generates ID data and waits for a return signal (either OK or ERROR) from the controller.

Alarms (Unregistered / Password / Fingerprint Error)

When an unregistered card is read, the wrong password is entered or the wrong fingerprint is scanned, the access is denied and the YELLOW LED is lit for 3 seconds (Defaults).
If the **"EXTENSION MODE"**(OUTPUT TYPE) is applied, an ERROR Signal is generated (Low active, open collector) with ID data output.

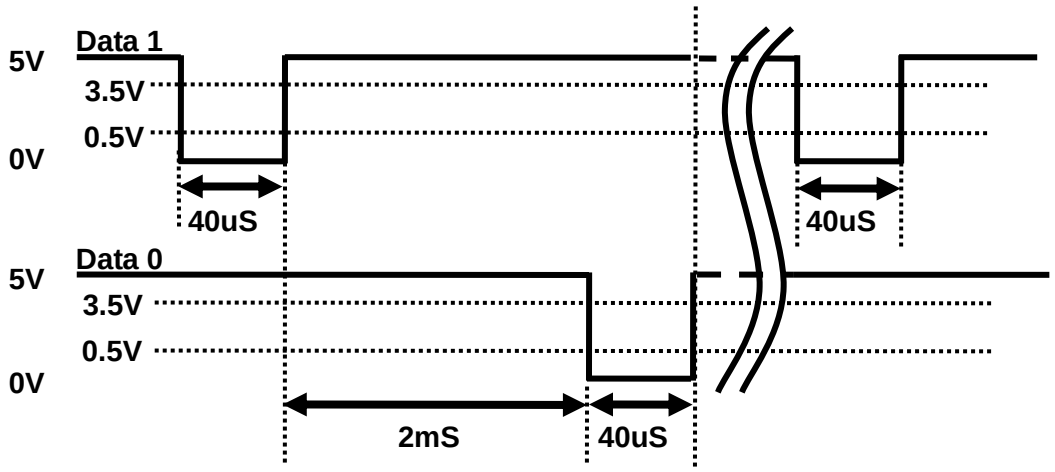
11.2 DATA OUTPUT FORMAT (SETUP MENU F2)

11.2.1 WIEGAND OUTPUT FORMAT

1. Data format (* : FINGER006SR)

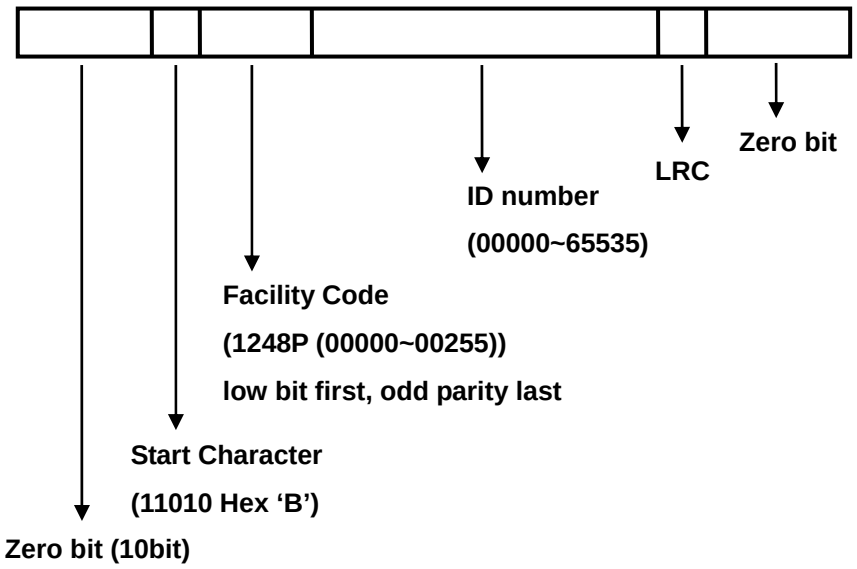
Bit 1	: Even parity of bit 2 ~ bit 13
Bit 2～9	: Facility code (000 ~ 255)
Bit 10～25	: ID number (00000 ~ 65,535)
*** Bit 2 ~ 33**	**: ID number (0000000001 to 4294967295)**
Bit 26	: Odd parity
*** Bit 34**	**: Odd parity**

2. Timing diagram

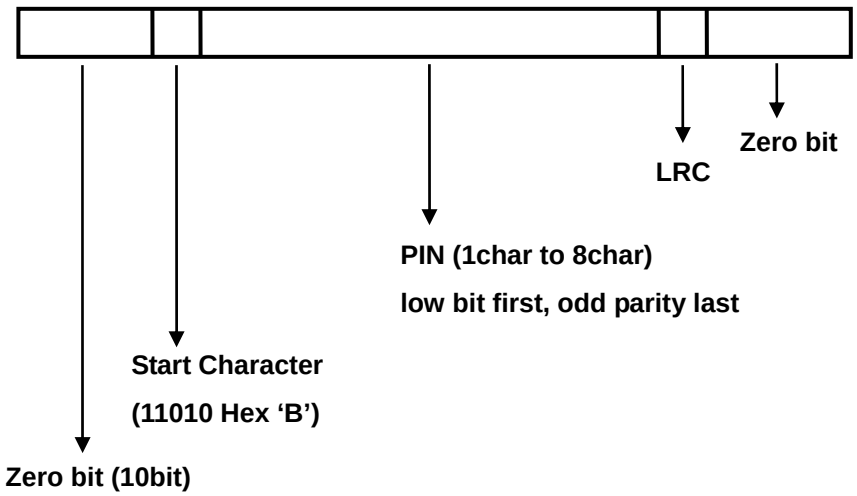


11.2.2 ABA TRACK II MAGSTRIPE OUTPUT FORMAT

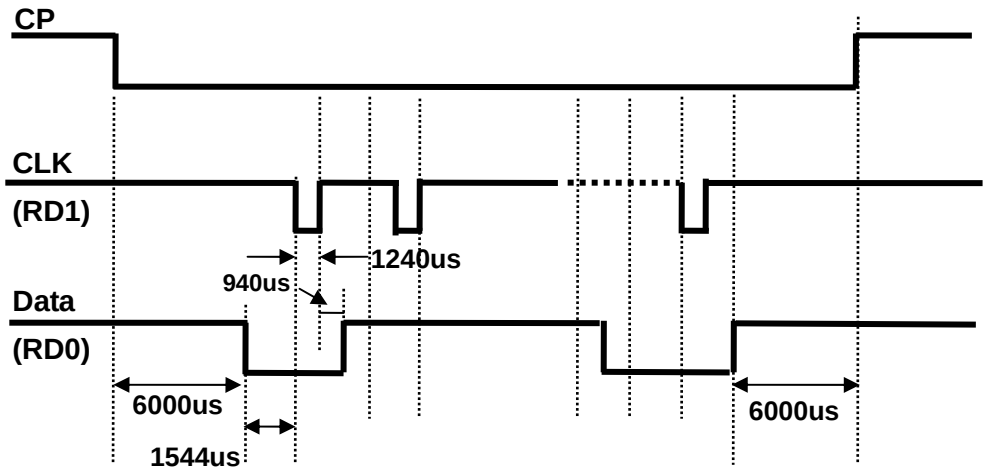
1. Data format (for Card numbers)



2. Data format (for PIN)



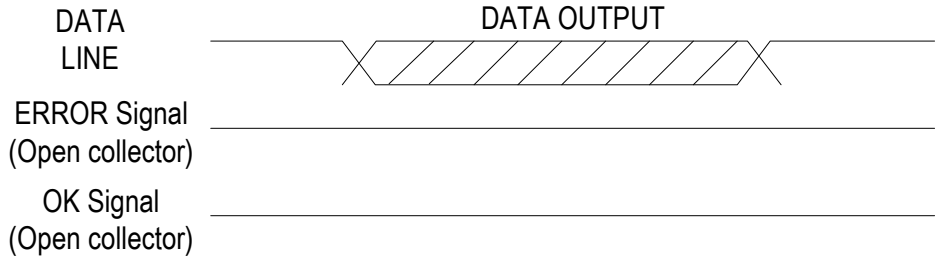
3. Timing diagram



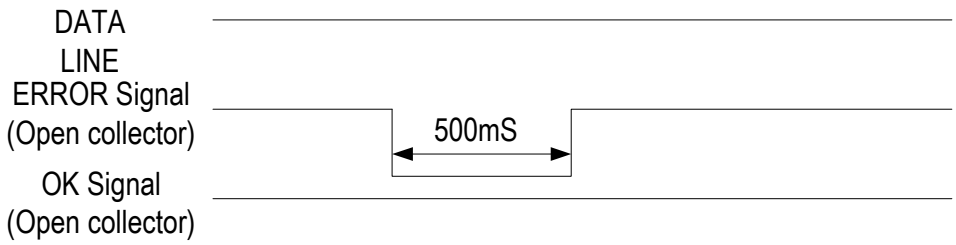
11.3 DATA OUTPUT FORMAT (SETUP MENU F2)

11.3.1 NORMAL MODE

a. Registered ID/Registered Fingerprint

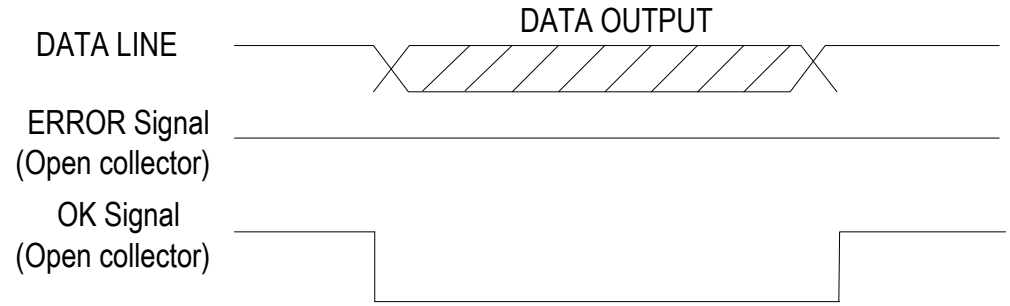


b. Unregistered ID/Fingerprint error

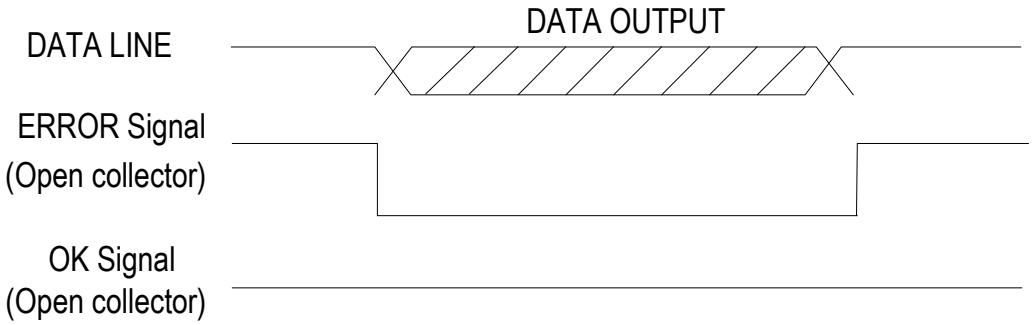


11.3.2 EXTENSION MODE

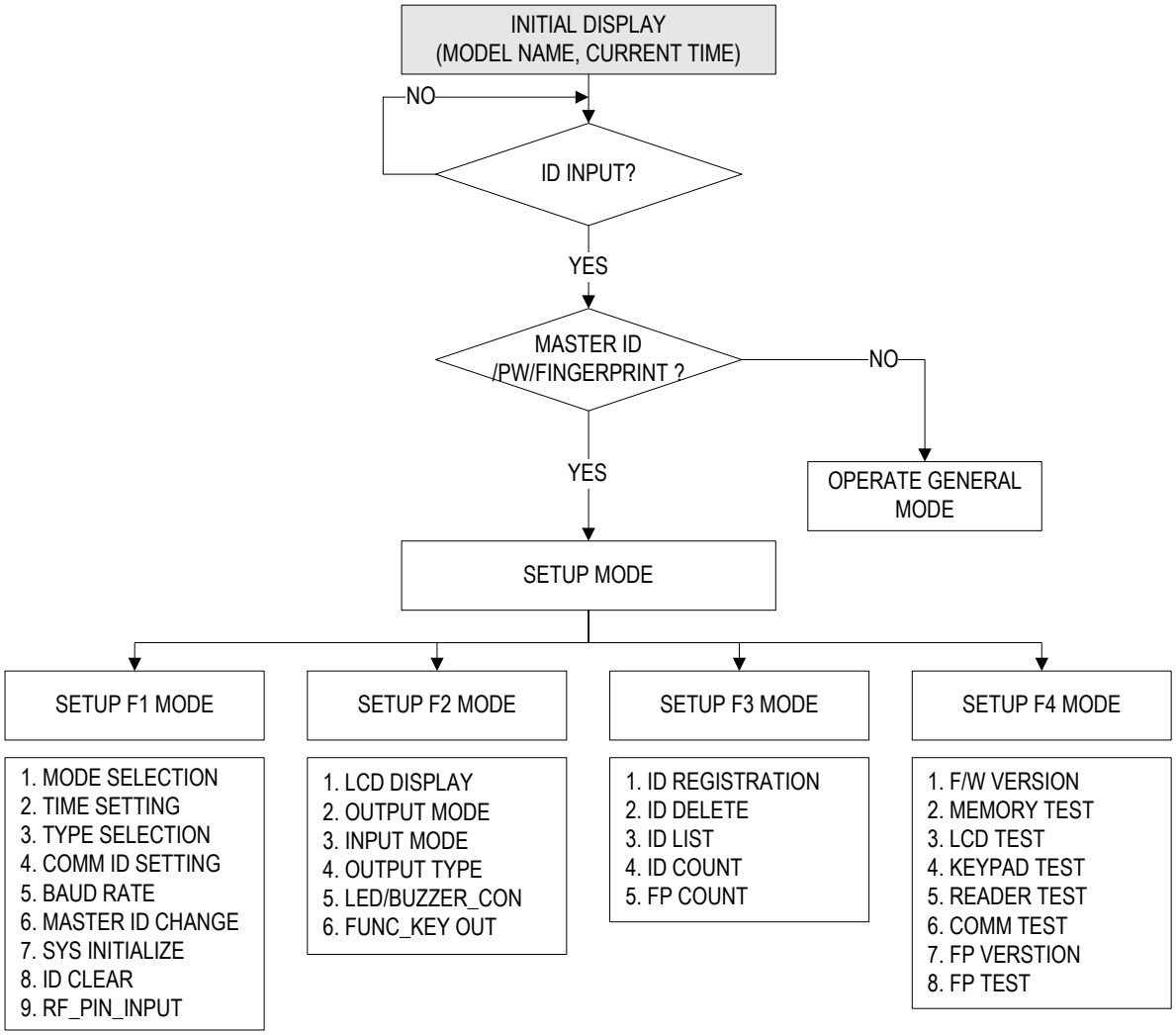
a. Registered ID/Registered Fingerprint



b. Unregistered ID/Fingerprint error

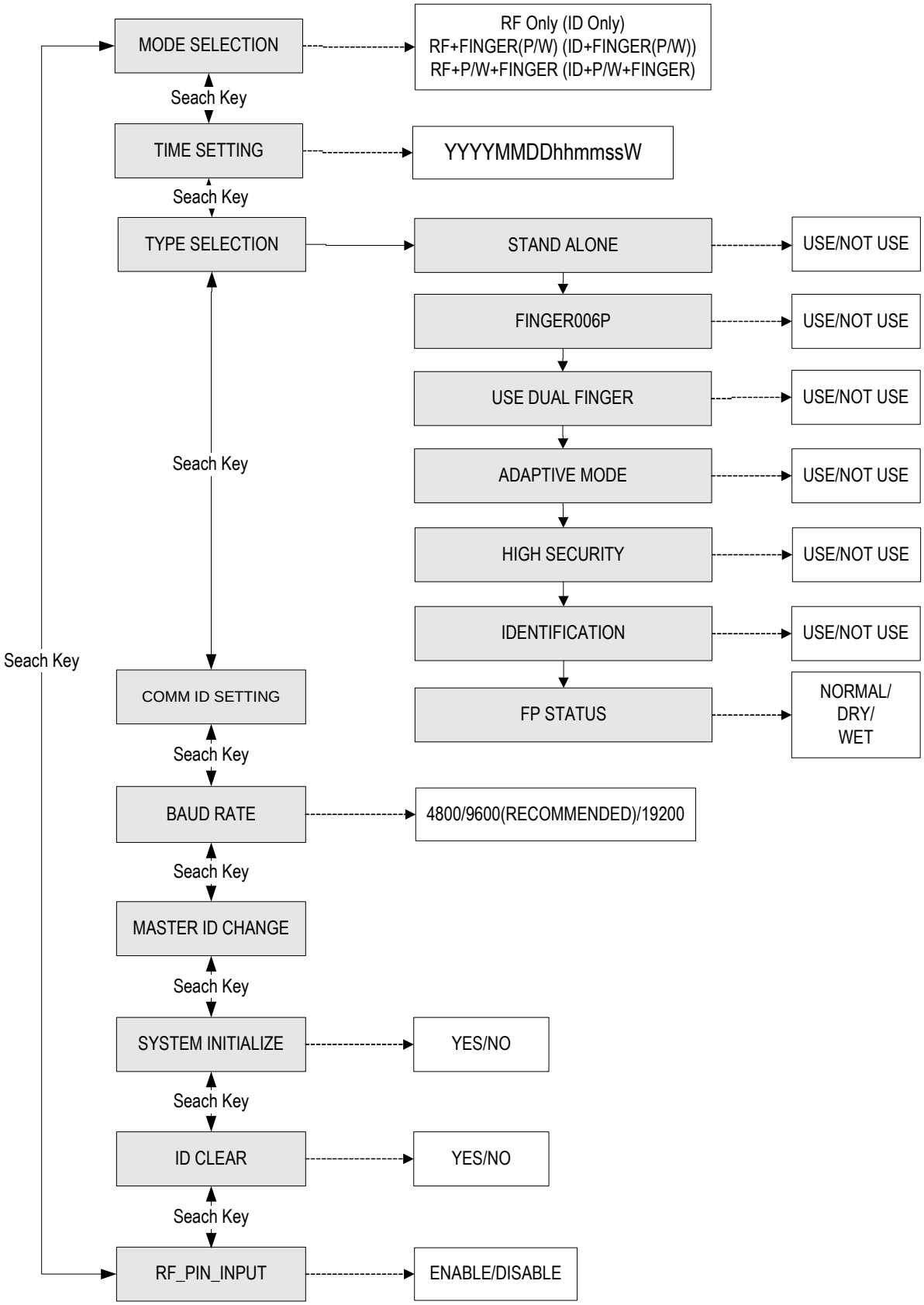


12. Setting Changes

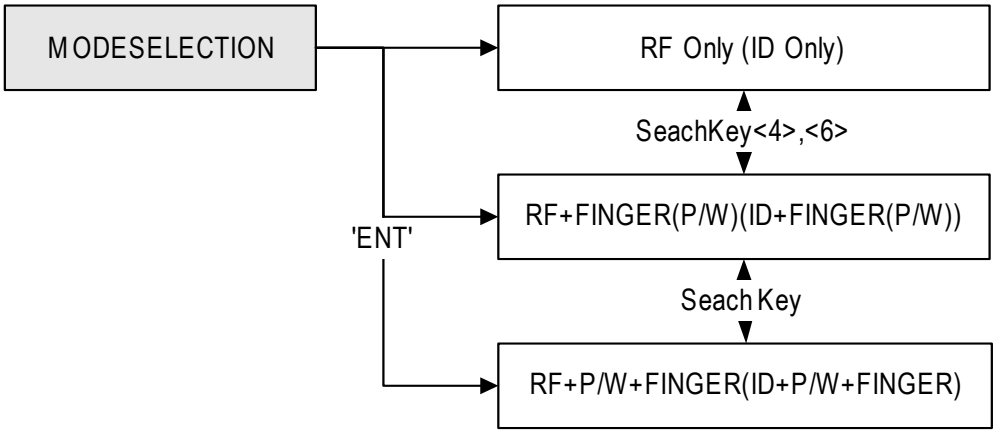


☞. For a setup or **FINGER006** setting adjustment, you have to enter the **SETUP MENU**, first. To do so, press the <**0**> key 8 times for **Master ID** (Default "00000000") and the <**ENT**> key and press the **Master Password** (Default "3141") and the user can get into the SETUP MENU. There are 4 main SETUP MENUs and you first get into [SETUP MENU F1]. You can move to other SETUP MENUs by pressing <**F1**> key for [SETUP MENU F1], <**F2**> key for [SETUP MENU F2], <**F3**> key for [SETUP MENU F3], and <**F4**> key for [SETUP MENU F4]. There are several **SUB MENUs** for each main SETUP MENU and you can scroll up and down the SUB MENU by pressing <**4**> and <**6**> key in the main SETUP MENU. You can press the <**ESC**> key to exit the SETUP MENU and return to the normal operation. You can also change the Master ID in the [SETUP MENU F1]. The Master ID for **FINGER006SR** is a 10-digit number. (Default "0000000000") and the default Master Password is <**3141**>.

12.1 SETUP MENU F1



12.1.1 READER MODE SETTING

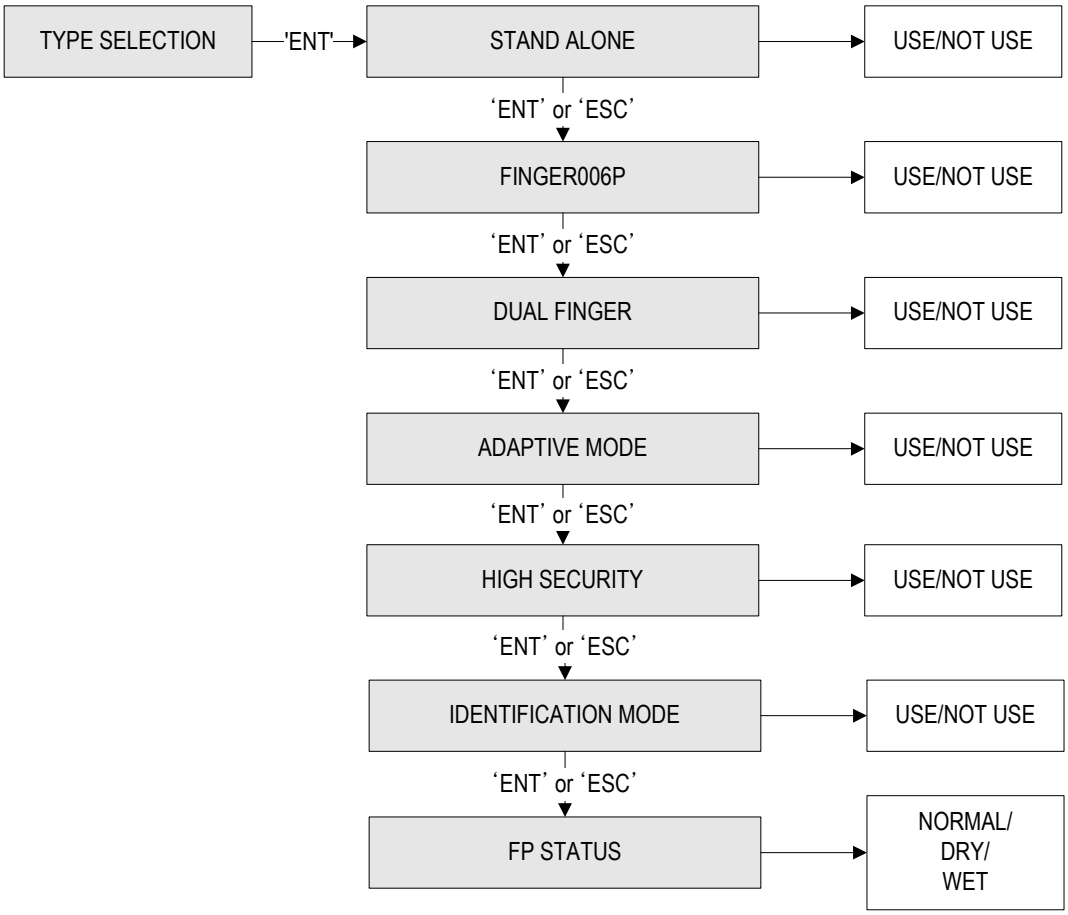


MODE SELECTION -->RF ONLY	☞ This Menu is for selecting the operating mode. You can choose to use or not to use a password (or a fingerprint) for each access. The lower line on the LCD indicates the current operating mode. Please press **<ENT>** key to change the mode.
MODE SELECTION -->RF ONLY MODE SELECTION -->RF+FINGER (P/W) MODE SELECTION -->RF+P/W+FINGER	☞. Then, this figure appears on the LCD, press **<4>** or **<6>** key to toggle the mode, and confirm your selection by pressing **<ENT>** key. To adjust other settings, press the **<4>** and **<6>** keys. RF only: The door is accessible with a card (ID) alone. RF+FINGER(P/W): To access the door, a card(ID) and a fingerprint (or a password) are needed. RF+PIN+FINGER: To access the door, a card (ID) and a password and a fingerprint are needed.

12.1.2 TIME SETTING

TIME SETTING MM/DD hh:mm:ss	☞. The current time is displayed To adjust the time setting, press the **<ENT>** key.
YYYYMMDDhhmmssW _	☞. Enter a 15-digit number (Year, Month, Day, Hour, Minute, Second and Week). If the entered number is out of range, an error message is displayed after all of the 15 numbers are entered. e.g.) <200106071330253> ⟶ Year: 2001, Month: 6, Day: 7 (Tuesday) PM 01: 30: 25

12.1.3 TYPE SELECTION



USE STAND ALONE? -->USE	☞. You can select whether you use the FINGER006 as a Stand Alone or not. **NOTE**: If this is set to **<NOT USE>**, **FINGER006** generates ID data and waits for a return signal (either OK or ERROR) from the controller. (The default setting is **<USE>**.)
USE FINGER_006P? -->NOT USE	☞. This menu comes after **<STAND ALONE>** setting. **(Only applicable to versions lower than V4.00)** **NOTE**: If **FINGER006P** is used, setting should be **<USE>**.
USE DUAL FINGER? -->NOT USE	☞. This menu comes after **<FINGER006P>** setting. **NOTE**: If you set **Dual Finger Mode** to 'USE ', you can register 2 different fingers for your ID so that if one finger is injured, you may verify your ID with the other registered finger.

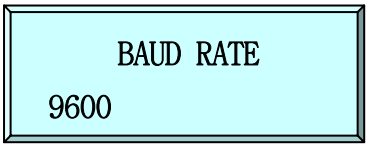
USE DUAL FINGER?	No. of Template/Finger	Authentication Success Ratio	Recommended Authentication Mode
NOT USE	2 fingerprint storage templates for a single finger.	High	Identification Mode
USE	1 fingerprint storage template each for 2 different fingers.	Low	Verification Mode

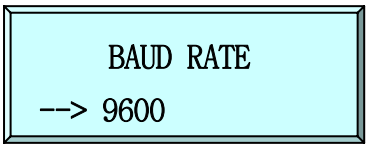
USE ADAPTIVE MODE? -->USE	☞. This menu comes after **<DUAL FINGER>**. **NOTE**: In **ADAPTIVE MODE**, scanning quality is better than normal mode. But, scanning speed is longer than normal mode.
HIGH SECURITY? -->NOT USE	☞. This menu comes after <ADAPTIVE MODE>. **NOTE**: If HIGH SECURITY is set to USE, FINGER006 automatically removes after-images **during the fingerprint capturing process**. In this mode, identification/verification errors caused by after-images can be reduced but the processing time can be a little bit longer. **CAUTION**: While this feature is applied, light fingerprint images from dry fingers cannot be distinguished from after-images. Therefore, identification/ verification errors will increase for dry fingers.
IDENTIFICATION? -->NOT USE	☞. This menu comes after <ADAPTIVE MODE>. **NOTE**: In **IDENTIFICATION MODE**, 1:N authentication can be used. You can verify an ID via a fingerprint alone. In this mode, you must press **<ENT>** before fingerprint authentication unless a sensor is installed. (For **FINGER006** a (finger detect) sensor is optional.) * If not using **Identification Mode**, you're using **Verification Mode**.
FP STATUS -->NORMAL	☞. This menu comes after <IDENTIFICATION> setting. **NOTE**: <**NORMAL>** Default Use <**DRY>** Used in too dry areas <**WET**> Used in too humid areas

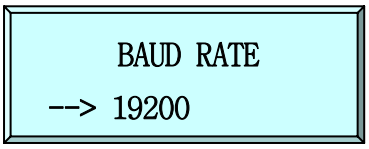
12.1.4 COMMUNICATION ID (ADDRESS) DISPLAY

COMM ID SETTING	☞. You can set the communication ID for the **FINGER006**. To change the communication ID, press **<ENT>** key.
COMM ADDRESS 000	☞. The number on the LCD is the current communication ID (Device No.) Please, press **<ENT>** key again to set a new communication ID.
COMM ADDRESS 001	☞. Enter the new ID (3-digit number) where the cursor is blinking. **A Communication ID must be in the range of 000 to 255.**

12.1.5 BAUD RATE SETTING





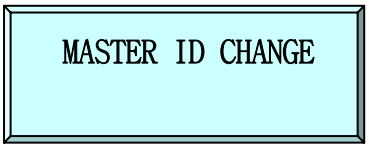


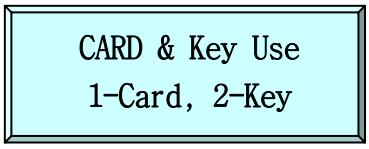
☞. **FINGER006** supports 4800/9600/19200 of baud rate and the recommended setting is 9600bps.
A wrong baud rate setting will cause communication errors, and the baud rate settings of **FINGER006** and host PC should be same. If any communication problem occurs, please check the following;

- Check COMM ID of **FINGER006** and host PC
- Check BAUD RATE of **FINGER006** and host PC
- Check communication port and cable
- Check COM port setup of host PC;
  Parity - None, Data Bit - 8 bit, Stop Bit - 1 bit

To change the baud rate, press **<ENT>** key and select desired baud rate by pressing **<4>** or **<6>** key then press **<ENT>** key.

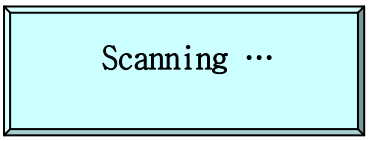
12.1.6 MASTER ID CHANGE





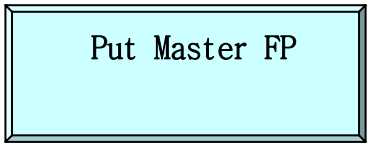
☞. Press **<ENT>** key to change the current Master ID. You should use the new Master ID to access the SETUP MENU after changing the Master ID.

Model	Default Master ID / PASSWORD
FINGER006	: "00000000" / "3141"
FINGER006SR	: "0000000000" / "3141"

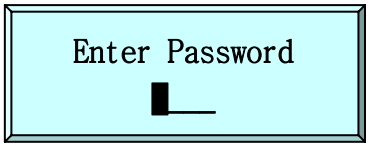


☞. **FINGER006** is waiting for an RF card to be registered. The card number will appear with a beep as the card is read.

☞. **FINGER006** is waiting for a keypad that is to be registered.
FINGER006: 4 to 8 digits
FINGER006SR: 10 digits
("0000000001" ~ "4294967295")



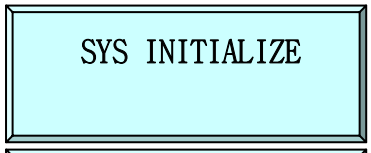
☞. A fingerprint for the new Master ID is necessary to be scanned.
If there has been a Master ID already, the fingerprint of the ID should be scanned first.

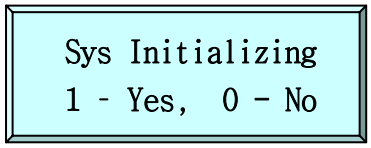


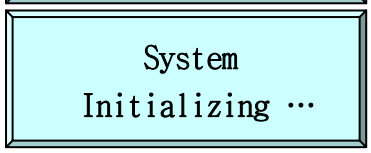
☞. Enter a new Master password (four digits) and finish changing Master ID

☞ The message indicates that changing the Master ID is successfully completed and **FINGER006** will return to the first screen of this menu soon.

12.1.7 SYSTEM INITIALIZE





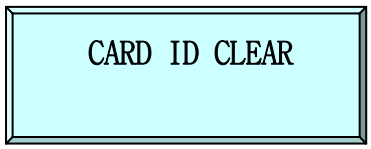


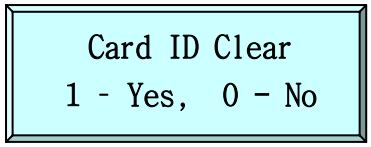
☞ This operation is for initializing the **FINGER006**.
Press **<ENT>** key, if initialization is needed.
(For example, for the first-time installation or for resetting the device in the event of a malfunction, etc.)

After initialization, **FINGER006** will return to the Setup menu.

CAUTION:
Initialization will erase all stored data in the memory.

12.1.8 CARD ID CLEAR

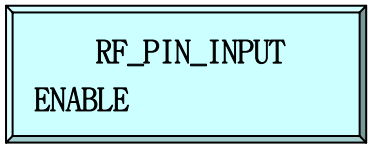


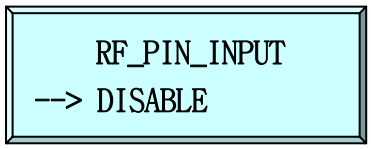


☞. All User IDs (Card IDs) can be cleared from the memory at once by this operation.
Press <ENT> key then press <1> key to clear all User ID or <0> key to cancel the operation.

CAUTION:
Before clearing all User ID, make sure that the registered User ID is no longer used otherwise all registered User ID may be lost.

12.1.9 KEYPAD INPUT SETTING

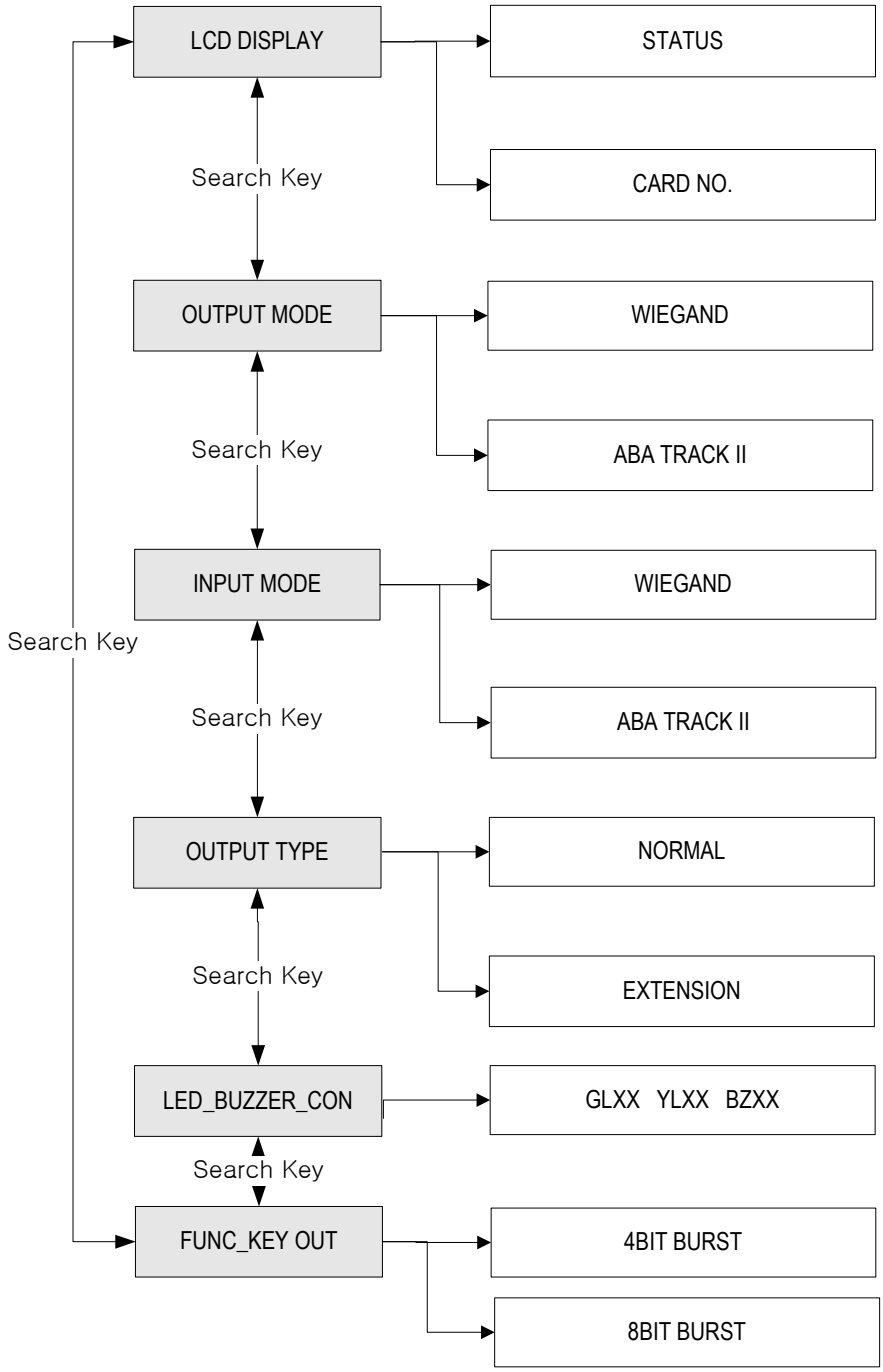




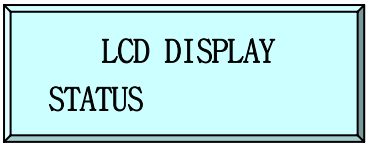
☞. If you enable the PIN input, then you can use the keypad to enter your PIN and access the door even if you don't carry the RF card with you.
When it is disabled, accessing the door by the keypad will be denied. Press **<ENT>** key to change the setting.

CAUTION:
The default Master number, **"00000000"**, must be replaced with a new Master card number before disabling keypad input Otherwise, you **CANNOT** access the setup menu again. If this happens, the only thing you can do is hardware initialization. **Do not use** this menu with **FINGER006P**.

12.2 SETUP MENU F2



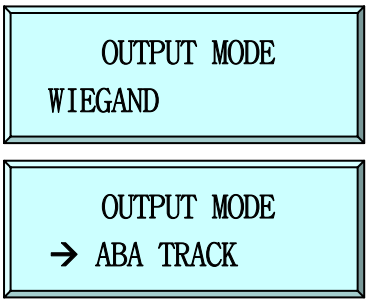
12.2.1 LCD DISPLAY SETTING



☞. You can select whether the LCD will display the STATUS or the CARD number.

- **STATUS**: Display the status of reading ID.
- **CARD NO**: Display the ID number of the presented card.

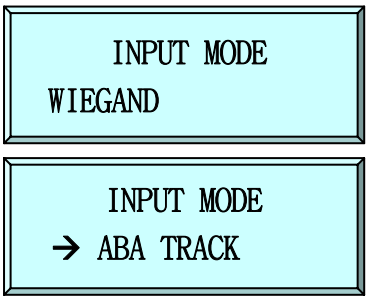
12.2.2 OUTPUT MODE SETTING



☞. You can select the output format between WIEGAND or ABA TRACK.

- **WIEGAND**:
  Outputs ID data through Wiegand output line.
- **ABA TRACK**:
  Outputs ID data through ABA track output line.
  (Open collector)

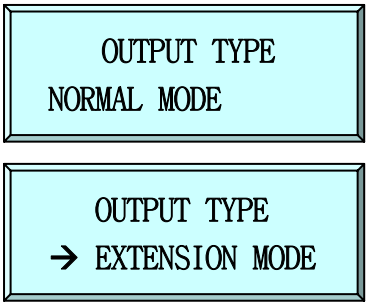
12.2.3 INPUT MODE SETTING



☞. This is input mode setting menu. The user can select whether INPUT MODE is WIEGAND or ABA TRACK. **(Applicable to FINGER006EX only.)**

- **WIEGAND**:
  Input ID data through Wiegand input line.
- **ABA TRACK**:
  Input ID data through ABA track input line.

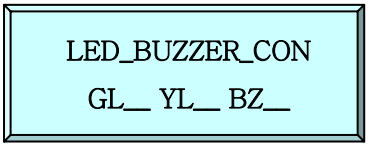
12.2.4 OUTPUT TYPE SETTING



☞. You can select the OUTPUT TYPE between NORMAL MODE and EXTENSION MODE.

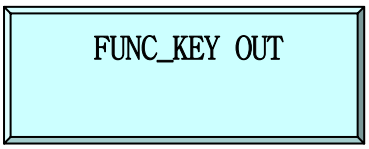
- **NORMAL MODE**:
  If a registered ID or/and a fingerprint is entered, FINGER006 outputs ID data only.
- **EXTENSION MODE**:
  If an ID or/and a fingerprint is entered, FINGER006 outputs OK or ERROR signal and ID data.

12.2.5 LED_BUZZER_CONTROL



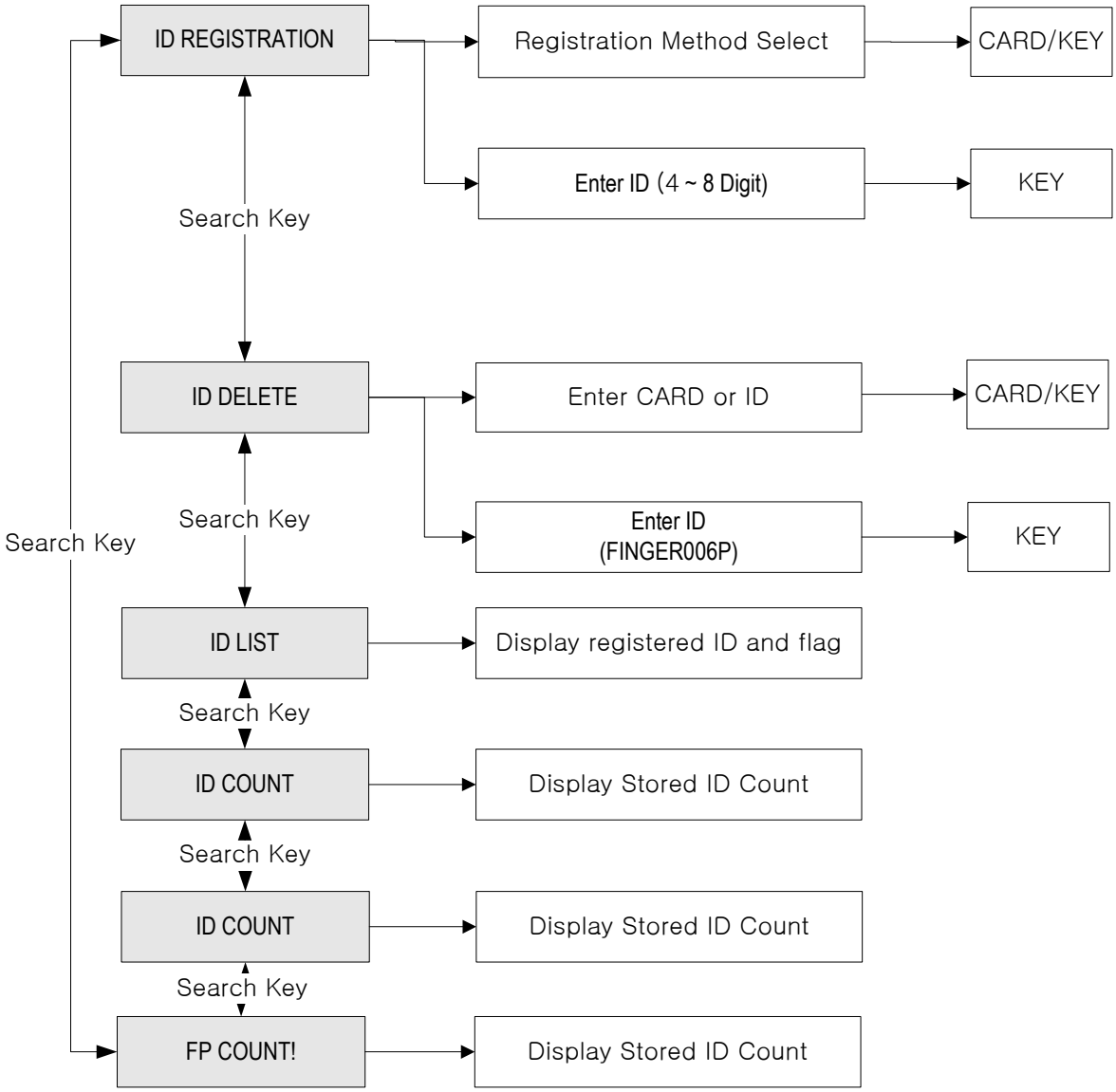
☞. This function controls the LED and Buzzer of the reader.
GL (Green LED): controls the card reading status.
YL (Yellow LED): controls the error indication in case a user card isn't authorized.
BZ (Buzzer): It controls the buzzer sound.
e.g.) GL03 YL03 BZ01 : When card is presented to the unit, green LED indicator is lit for 3sec. If a user card isn't authorized, the yellow LED indicator is lit and the buzzer beeps for 1sec.

12.2.6 FUNCTION KEY OUT

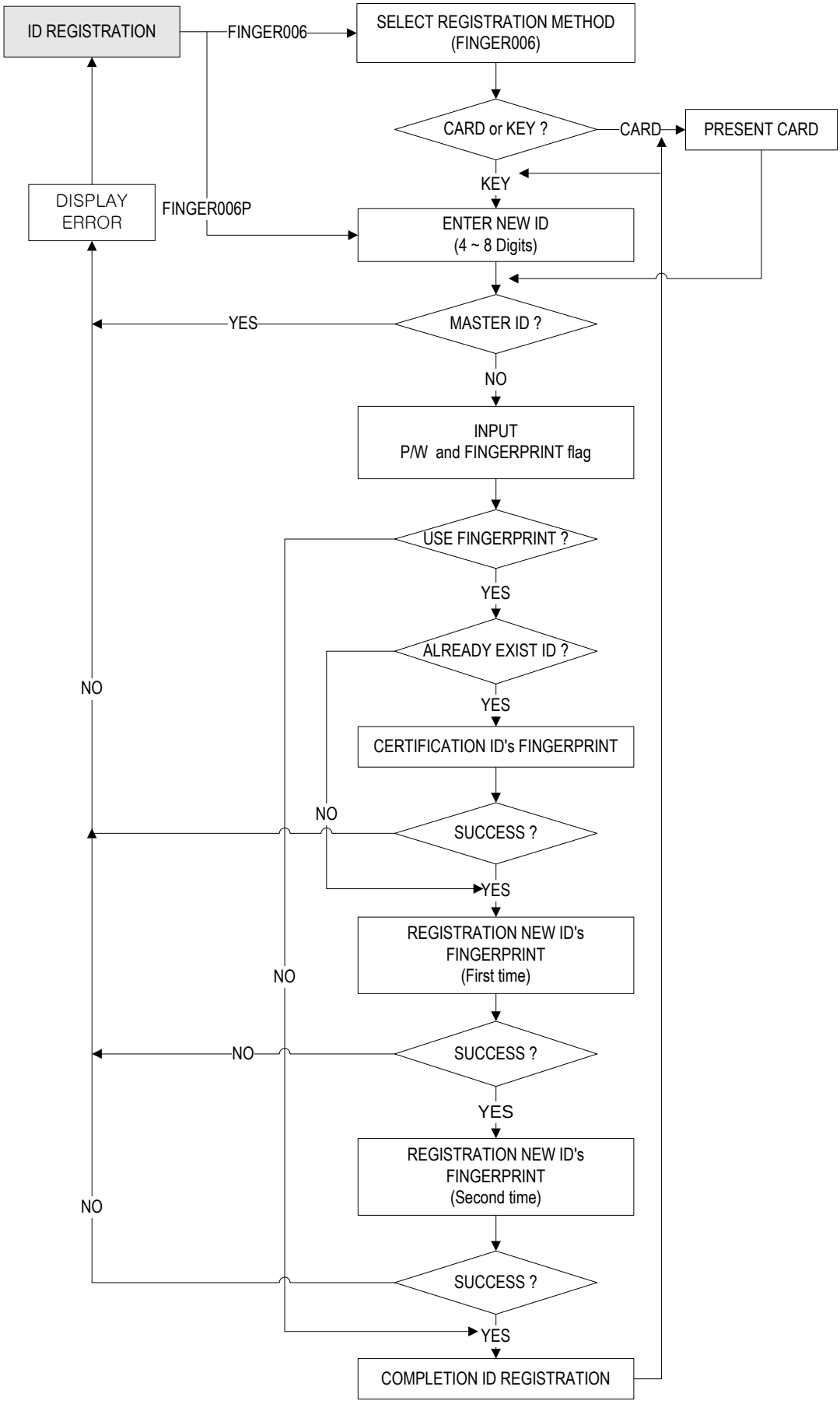


☞. This is set to use function key of the reader.
It is possible that function key is set to 4bit/8bit burst.

12.3 SETUP MENU F3



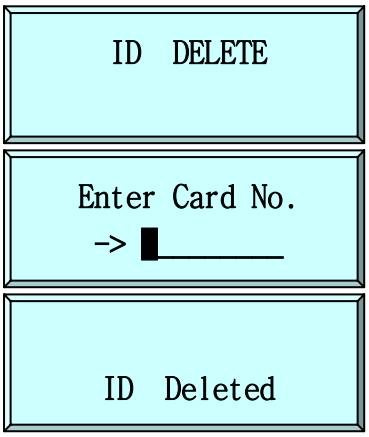
12.3.1 CARD REGISTRATION



ID REGISTRATION CARD & Key Use 1 - CARD, 2 - Key	☞. An ID number can be registered to the **FINGER006** by RF cards or through the keypad. For registration by RF cards, press **<1>** key For registration using the keypad, press **<2>** key, Or, you can quit the registration by pressing **<ESC>**.
Put ID CARD Scanning … Key Input ID --> _____	☞. In the case of registration by RF card, **FINGER006** will be waiting for an RF card to be registered. In the case of registration by keypad, you can register 8-digit ID. (As for **FINGER006SR**, an ID is 10 digits)
XXXXXXXX PW____ FP_ XXXXXXXX ID Registered	☞.This screen shows the ID number you just entered on the upper line, and you are required to enter the following information for the ID: 4-digit password and FP flag (Enter **<1>** to register a fingerprint, **<0>** not to.). If you enter **<0>** for the FP flag, the message 'ID Registered' will be shown for a moment and the controller will wait for another PIN number to be entered. You can register other PINs in the same way. Please, press **<ESC>** key to quit the registration. (The user can change the PW and the FP flag in the same way as the new registration.)
To Register FP Put Your FP On .. Lift and Put FP Waiting ...	☞.If you enter **<1>** for the FP flag to register a fingerprint for the ID, this screen will appear on the LCD and the red light will be illuminated from the fingerprint input sensor. As the fingerprint should be scanned twice, put the finger to the sensor, once the message is displayed, lift the finger off briefly and put it again. **NOTE**:1. The fingerprint registration requires 2 slightly different images of a fingerprint. For that reason, after the first scan, the finger must be lifted briefly. 2. When an ID number that is registered with a fingerprint is re-registered to change options, the current fingerprint is required to be scanned.
ID Registered [Q#1:] [Q#2:]	☞. The quality level of the registered fingerprint image. * [Q#1:] – Quality of the first fingerprint [Q#2:] – Quality of the second fingerprint

1) **PW** (password): The password used in RF + FINGER (P/W) and RF + P/W + FINGER mode.
2) **FP** (Fingerprint flag)
   1: To register a fingerprint for the ID that is being registered.
   (If you're re-registering an ID to change options and the ID is registered with a fingerprint, the previously-registered fingerprint should be scanned before you can change options.)
   0: When you don't need to register a fingerprint for the ID.
   If the controller is set to operate in RF+FINGER (P/W) or RF+P/W+FINGER mode, it will operate in RF+P/W (Password) mode for the ID.

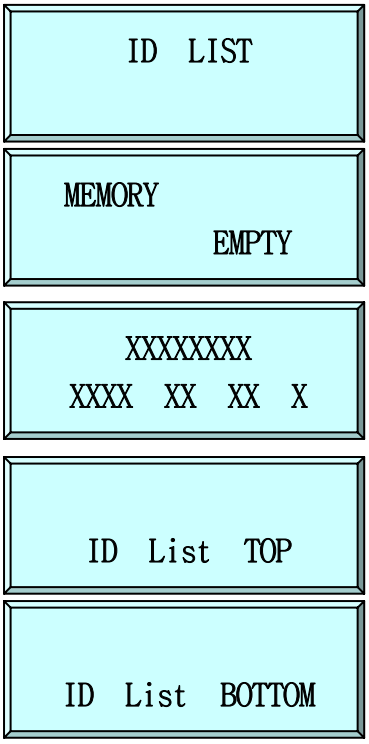
12.3.2 ID DELETE



☞. This is registered the ID Deletion menu.

To delete some registered ID(s), press **<ENT>** key.
Enter the ID number or present the card that you'd like to be deleted.

12.3.3 ID LIST



☞. If you would like to check the list of the registered user IDs, press the **<ENT>** key in this menu.

"MEMORY EMPTY" message will be displayed when there is no registered user ID.

4-8 digit user ID, 4 digit password, the assigned T/S, reader code and fingerprint flag will be displayed on the LCD, and you can scroll up and down the list by pressing **<4>** and **<6>** keys.
Please press **<ESC>** key to return to the Setup menu.

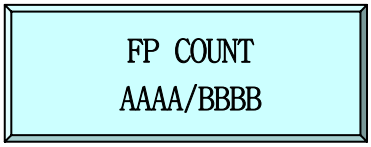
"ID LIST TOP" message will be displayed first when the first registered user ID is displayed on the LCD.

"ID LIST BOTTOM" message will be displayed first when the last registered user ID is displayed on the LCD.

12.3.4 REGISTERED ID COUNT

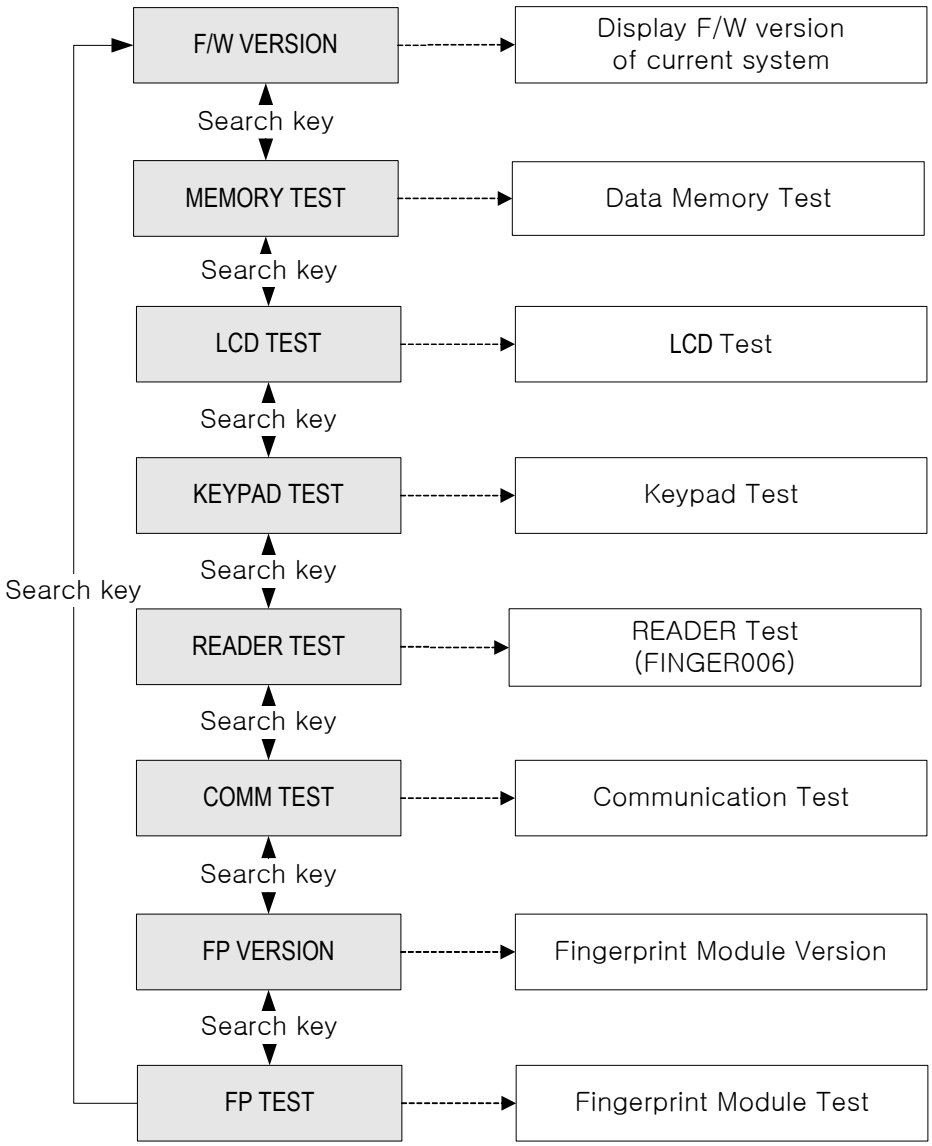
☞. This menu displays the total number of registered user IDs. When a user ID is added or deleted, the result is applied here automatically.

12.3.5 STORED FP COUNT



☞. The total number of the stored fingerprint is displayed.
AAAA: # of the currently registered fingerprint users.
BBBB: # of the maximum fingerprint users.
e.g. 1,000 / 2,000 / 4,000 fingerprint users.

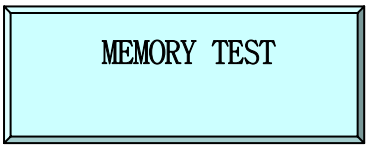
12.4 SETUP MENU F4

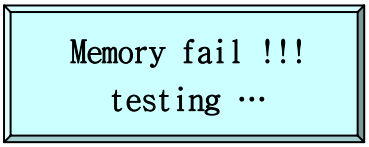


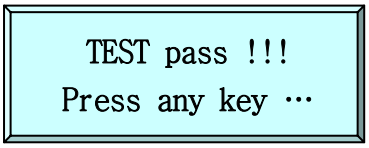
12.4.1 VERSION CHECK

☞. The version of the controller firmware is displayed on the LCD.
Please press **<4>** or **<6>** key to look at other menus of [F4 Setup Menu].

12.4.2 MEMORY TEST





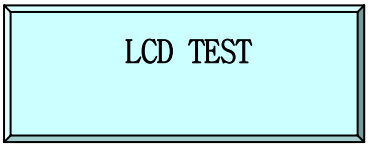


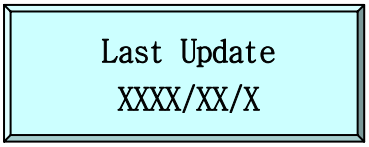
☞. To test the memory, press **<ENT>** key.

If the MEMORY has any problem, the LCD will show the memory block number with “Memory fail!!!” message. In this case, you have to contact us for a technical support.

If the MEMORY is working properly, then LCD will show “TEST pass!!!” message.

12.4.3 LCD TEST

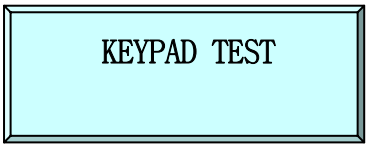


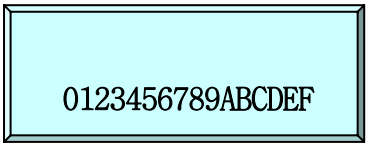


☞. To test the performance of the LCD, press **<ENT>** key.

As the test proceeds, several characters will appear and disappear quickly from right to left.

12.4.4 KEYPAD TEST

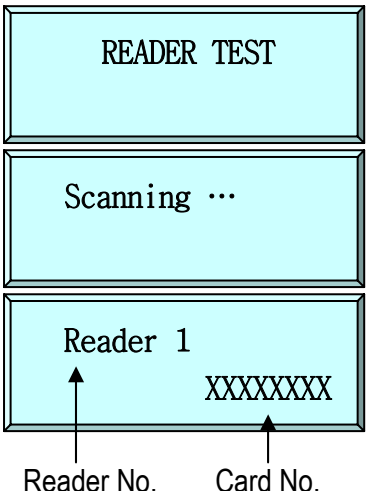




☞. Please press **<ENT>** key to start the keypad test.

If the keypad is properly operating, pressing the keys on the keypad will remove the corresponding letter from the LCD.
Note: During this test, A, B, C, D, E and F refer to **<F1>**, **<F2>**, **<F3>**, **<F4>**, **<ESC>** and **<ENT>**key, respectively.

12.4.5 READER TEST

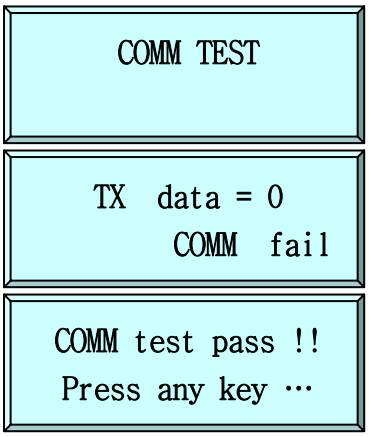


☞. To test the performance of the reader, press **<ENT>** key.

NOTE:
For **FINGER006P**, this menu is not used.

The reader is waiting for an RF card to read.
Present an RF card to the reader.
The test is completed successfully if the LCD displays the ID card number (as shown on the left.)

12.4.6 COMMUNICATION TEST



☞. To test the performance of input ports, press **<ENT>** key. (**Before this communication test, connect the RS232 RX, TX wires to each other.**)

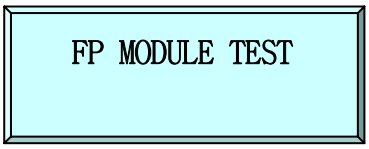
If there is a problem with the communication performance, check connections and try again.

As the test proceeds, the characters being transmitted and received will be displayed. Finally, the LCD will display "COMM test pass" message.

12.4.7 FINGERPRINT MODULE VERSION

☞ The version of the fingerprint module is displayed

12.4.8 FINGERPRINT MODULE TEST



☞. Test the fingerprint (FP) module.

13. FCC Registration Information

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with **Part 15 of the FCC Rules**.

Operation is subject to the following two conditions;

1. This device may not cause harmful interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A Digital Device, pursuant to **Part 15 of the FCC Rules**. These limits are designed to this equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

14. Warranty Policy and Limitation Liability

IDTECK warrants this product against defects in material and workmanship for the period specified below from the date of purchase under normal customer use. This Warranty doesn't apply: 1) to any product which has been dismantled without authorization of IDTECK or/and has a damaged or detached QC label on its back side; 2) to any losses, defects, or damages caused by improper testing, operation, installation, maintenance, modification, alteration, or adjustment; 3) to any product with a damaged or faded serial number on it; or 4) to any losses, defects, or damages caused by lightning or other electrical discharge, natural disaster, misuse, accident or neglect.

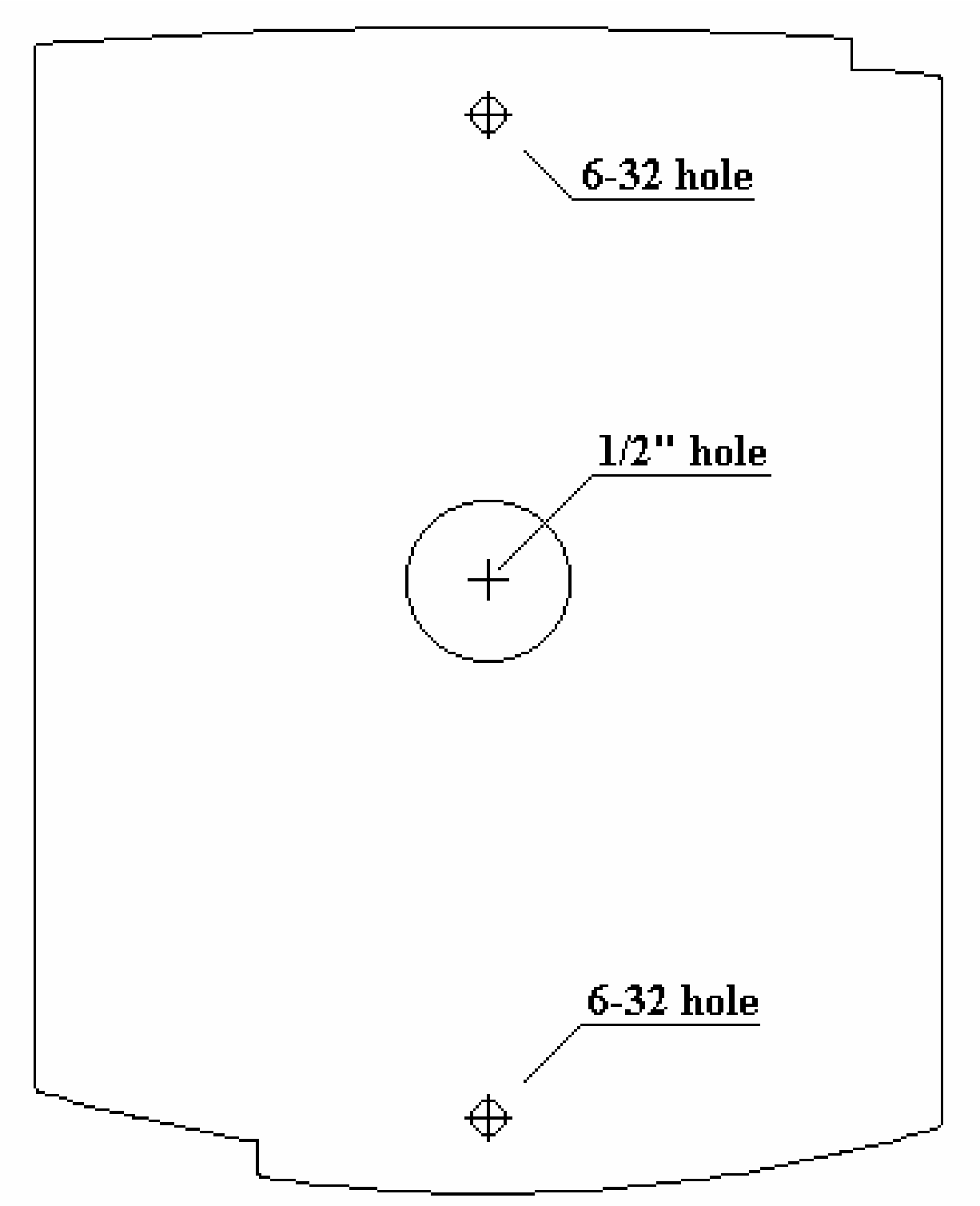
This Limited Warranty is in lieu of all other warranties, obligations, or liabilities on the part of IDTECK, and IDTECK DISCLAIMS ANY AND ALL WARRANTY, WHETHER EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.IDTECK does not, and cannot, know who is present, what property is located, where this product will be used; it would be extremely difficult to determine the actual damages that may result from a failure of the product to perform as anticipated; and the low price of this product is based upon the nature of the product provided and the limited liability that IDTECK assumes. IDTECK IS NOT RESPONSIBLE FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR LOSS, DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR OTHER LOSS, AND IDTECK'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT.

To obtain repair or replacement under the terms of this warranty, visit IDTECK's Website (http://www.idteck.com) and place an online RMA request. After an RMA code is issued, return the product along with the authorization RMA code.

>> Warranty Period

	Item	Warranty Period
1	RF READER / FINGERPRINT READER	2 years
2	RF CARD (Active type)	
3	STANDALONE CONTROLLER	
4	CONTROL PANEL	
5	FINGERPRINT CONTROLLER	
6	MOLDED RF READER (RF10, RF20, RF30, RF TINY, IP10, IP20, IP30, SR10E, SR10UE, SR10SE, SR10RWE, SR10BE)	Lifetime
7	RF CARD (Passive type) (IDC80, IDC170, IDK50, IMC125, LXK50, IPC80, IPC170, IPK50, ISC80, ISC80S, ISK50, IMC135, IHC80, IP100, IP200)	

15. Template



RMA REQUEST FORM

IDTECK accepts only on-line RMA requests on our Website (www.idteck.com). Please provide us with basic information in the below form so that we can understand your problems better. Send us back this form with your products after an RMA code is issued on our Website. This form is not compulsory.

Authorization RMA Code :	
1. Company Name	
2. Model Name	
3. Serial No.	
4. Original Invoice No.	
5. Distributor	
6. Purchasing Date	
7. RMA Request Date	

Please check your problems.

□ Card Reading	□ Power	□ Keypad
□ Communication	□ Relay	□ LCD
□ LED & Buzzer	□ Registration	
□ Others :		

IDTECK RMA Center >>

3F, 10/10-1/10-2, Dodang-Dong, Weonmi-Gu, Bucheon-Si, Gyeonggi-Do 157-030, Korea
Telephone: 82.2.2659.0055 (HQ) / 82.32.671.5642 (RMA Center)
Fax: 82.2.2659.0086 (HQ) / 82.32.671.5641 (RMA Center)
Website: www.idteck.com
e-Training Center: www.idtecktraining.com

MEMO

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The specifications contained in this manual are subject to change without notice at any time.

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